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ABSTRACT

"Wildlife needs a Place to Live" is a part of a series of materials in the Wildlife Education Service for Kansas youth series. The goal of the program is to provide information about wildlife and to establish in children an awareness and appreciation of wildlife. A booklet for children and a teacher's guide are included. The booklet was written for third-grade children but can be easily adapted for other grades. The materials are designed for multidisciplinary use. The teacher's guide includes the following materials: (1) in introduction and foreword; (2) an opinionnaire about the materials; (3) a student award form; (4) ideas for classroom bulletin boards; (5) reproducible worksheets for students; (6) supplemental activities and approaches for language arts, science, art, industrial arts, mathematics, social studies, music, and physical education; and (7) appendices which list resources and references, and includes a glossary of terms used in teaching this topic. (CW)

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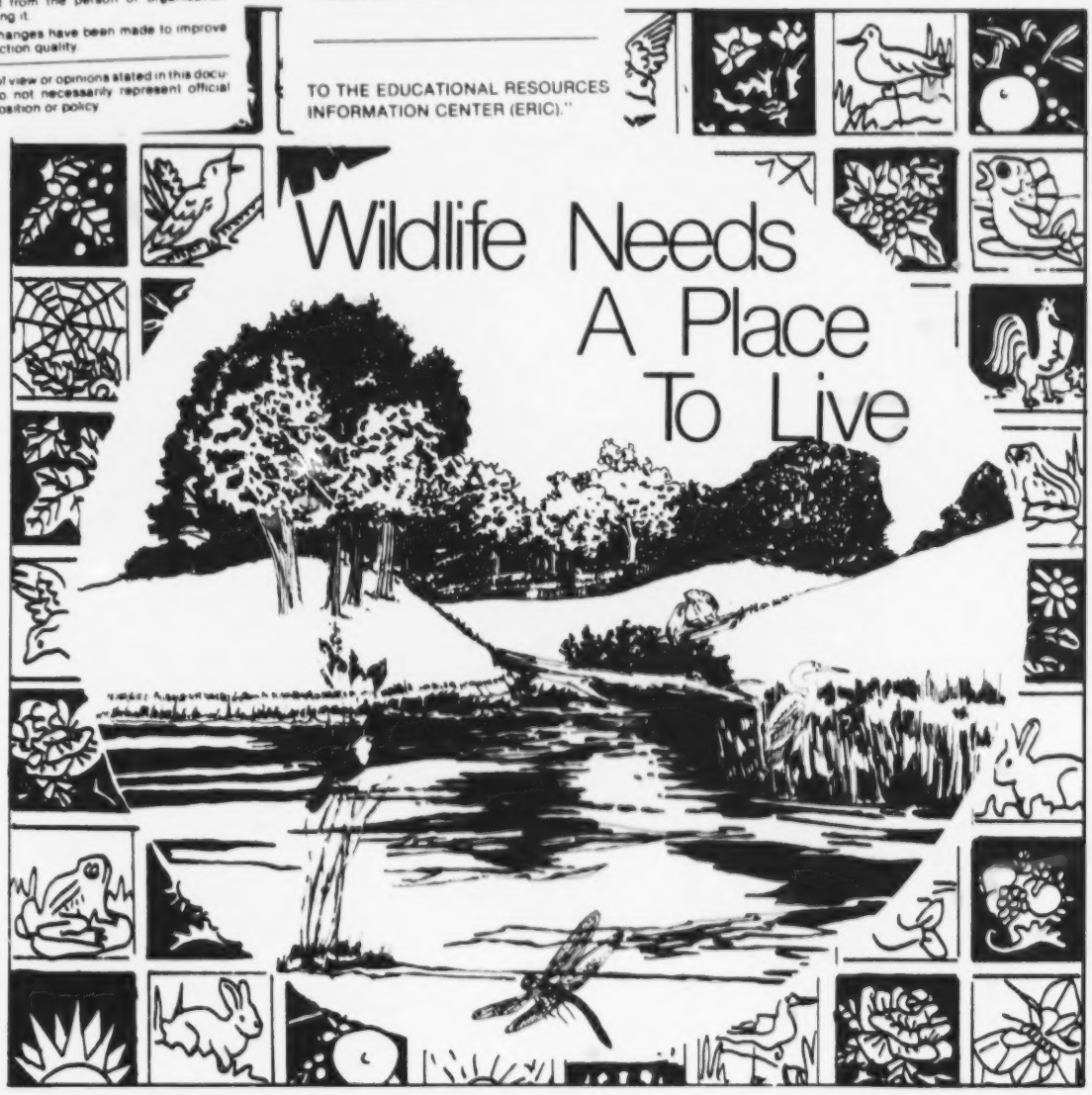

Teacher's Guide

wildlife education service

KANSAS WILDLIFE AND PARKS

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Teacher's Guide

Wildlife Needs A Place To Live

Comprehensive Program Written and Developed by

Joyce Harmon Depenbusch
Wildlife Education Coordinator

Design and Illustration by

Alan W. Baccarella

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KANSAS WILDLIFE AND PARKS

A series of wildlife education materials for Kansas youth from Kansas Wildlife and Parks

THIS MATERIAL IS DEDICATED TO THE CHILDREN OF KANSAS;
MAY THEY KNOW A LOVE OF WILDLIFE.

Funded by hunting and fishing license fees and the
Nongame Wildlife Tax Check-Off Program

Wildlife Education Service
Kansas Wildlife and Parks
Box 54A Route 2
Pratt, Kansas 67124

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Introduction

WILDLIFE NEEDS A PLACE TO LIVE is part of a series of materials in the Wildlife Education Service for Kansas youth from the Kansas Department of Wildlife and Parks. (See inside cover of the student booklet for other titles.) The material is designed for use by teachers. The goal of the program is to provide information about wildlife and to establish in children an awareness and appreciation of wildlife. This booklet was written for third grade but can be easily adapted for other grades. The study of wildlife need not be limited to science class but should be multidisciplinary. Enrich your existing curricula with this material.

You do not have to be a biologist or wildlife expert to teach about wildlife. The Wildlife Education Service materials were written for anyone who has an interest in teaching children about wildlife and the environment. The worksheets and activities in the teacher's guide reinforce information in the student's booklet. Do any quantity or combination of activities and worksheets that are appropriate for your schedule. The lessons may be used as a unit of study or used throughout the year when time allows. The worksheets may be done in whatever sequence you choose.

ONE set of each grade's materials will be provided to each school to be shared among the teachers. The booklet may be reproduced if additional copies are needed or you choose to have copies for students to take home.

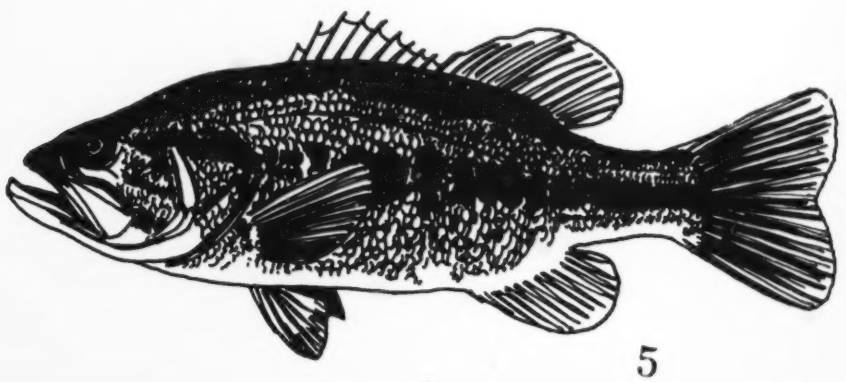
The Department of Wildlife and Parks has a Wildlife Reference Center located at the Pratt headquarters. The center includes films, filmstrips, slide series, games, posters, books, and other wildlife related material available to schools on a free loan basis. Return mail cost is the only expense to the school for use of this material. Refer to your Wildlife Reference Center catalog for materials appropriate to your study. Especially recommended for use with this booklet are: FS-17, Places Where Plants and Animals Live; FS-24, The Lorax; FS-16, Observing Living Things; LK-3, Animal Homes, 3-12, Owlet; FS-15, The Life of Animals; M-67, More Than Trees; and LK-6, Wildlife In Your World. Be sure to check your Wildlife Reference catalog for other materials. A catalog has been sent to each school district office. Please contact your administration office for your district's copy. Orders will be filled on a first-come, first-served basis, so we suggest sending your requests in early.

To be effective, material must be used. This format was written to be easy to use, ready to use, and flexible. Little additional preparation or equipment is required. The most important ingredients for success in your lessons will be your enthusiasm and imagination. Technical references can be obtained from the Wildlife Reference Center or your local library.

The material is appropriate throughout Kansas, no matter what size community or region of the state you live in. It is not necessary to have a natural area near your school; use whatever is available. Many of the supplementary activities can be done on the schoolgrounds or in the classroom.

This program was funded from hunting and fishing license fees and partially by the Nongame Wildlife Tax Check-off Program.

Remind your students that when they are outside they are company in the homes of wildlife; therefore, their best manners should be used.



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KANSAS FISH AND GAME

Foreword

Dear Teachers,

Kansas has a diversity of climate, terrain, and vegetation that provides for a variety of wildlife. Use these attributes to the fullest in your classroom. Tap your students interest in wildlife in all curricula areas by exploring what Kansas wildlife has to offer. People, especially children, need to be more aware of wildlife and how their actions affect wildlife. The future of wildlife depends on actions we make today. Educate our young people to care about their future and the future of wildlife.

You can do me a favor by contacting the K-6 teachers in your district and letting them know, or reminding them of, what the Wildlife Education Service has to offer. I've sent out curriculum, Wildlife Reference Center catalogs, and numerous other resource materials to every public and private building in the state. I've tried every avenue within budgetary limits, that I can think of to inform teachers, librarians, and administrators of the Wildlife Education Service. A reminder from you may get them involved.

Let me know how I can help you better inform you district's teachers. If the K-6 curriculum and other materials that have been sent are lost or misplaced, contact me for a limited number of replacement sets. Thank you for your help.

Please direct any questions or comments concerning the Wildlife Education Service materials to me at the Pratt headquarters. Good luck for a successful and exciting learning experience.

Sincerely,

Joyce Harmon Depenbusch

Joyce Harmon Depenbusch
Wildlife Education Coordinator
Kansas Wildlife and Parks
RR 2 Box 54A
Pratt, Kansas 67124

A true conservationist is a man who knows that the world is not given by his fathers, but borrowed from his children.
— John Madson

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Opinionnaire

Your input is important in continuing and improving this program. Any comments or ideas you want to share would be appreciated. Please complete the opinionnaire below or send your suggestions on a separate sheet to:

Joyce Harmon Depenbusch, Wildlife Education Coordinator
Kansas Department of Wildlife and Parks
RR 2 Box 54A
Pratt, Kansas 67124

Title of unit_____ Grade you teach_____
School district_____

The materials were:
_____ very useful _____ moderately useful _____ of no use

Students were:
_____ very interested _____ moderately interested _____ not interested

The materials were appropriate for the grade you teach. ( ) yes ( ) no
(if no, list more appropriate grade)_____

Rank each of the following components on a scale of 1 to 5 based on their value for your use. (1 represents highest grade; 5 represents lowest grade)

_____ student booklet
_____ bulletin board idea
_____ student award
_____ worksheets
_____ supplementary activities & approaches
_____ glossary
_____ resources & references
_____ Wildlife Reference Center

List favorite worksheet (s) or activity (ies)

List curricula areas where you used the material

Approximate amount of time (hours, days) spent using the material

Changes you would recommend. Please be specific.

Other comments

Thank you for your time and effort.

7

After students have successfully completed their study of this aspect of wildlife, award their progress. Copies can be made of this award and presented to them at the end of your unit of study.

Wildlife Awareness Award

IS PRESENTED TO

_____
name

For outstanding progress shown in the study of Kansas Wildlife

on _____ at _____
date school

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KANSAS WILDLIFE AND PARKS

_____
signed

motif by Daisy Baughman

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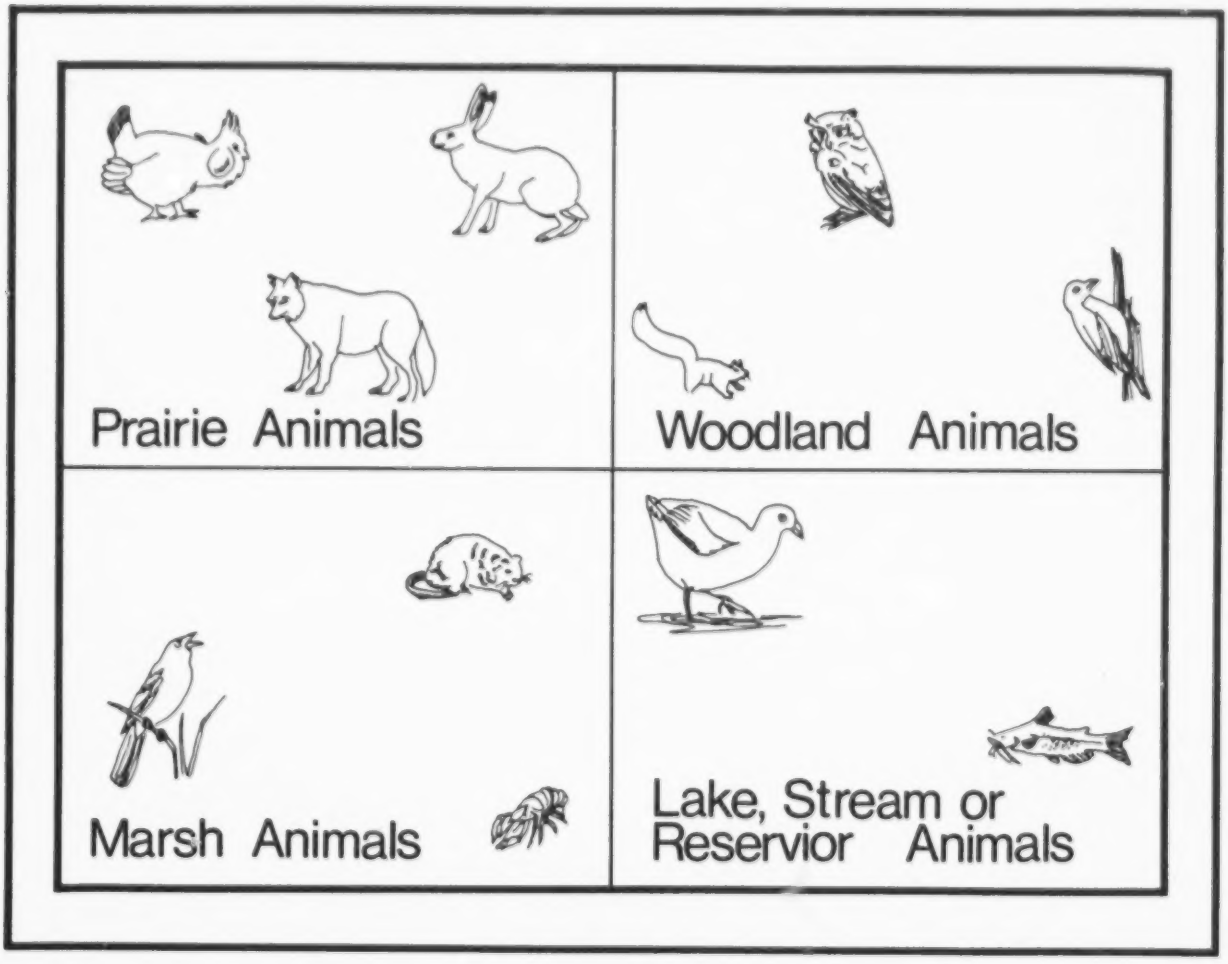
Habitat Bulletin Board Idea

Instructor Directions: Students put up pictures of animals that are found in each habitat. You may want to have some animals correctly placed to guide the students.



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zany zoology

NAME _____

Zoology means the study of animals. Wild animals do not behave like people, but sometimes it's fun to pretend that they do. Can you pick out the real from the make believe in this alphabet? Look up the words you're not sure of, and find the towns on a map. Practice your handwriting and have fun with wildlife at the same time. Try writing your own alphabet sentences.

Aa

An ancient antelope argued with an active ant around Atwood.

Aa

Bb

Burlington's Bobcat-Buffalo Band blows bagpipes beneath bushel baskets.

Bb

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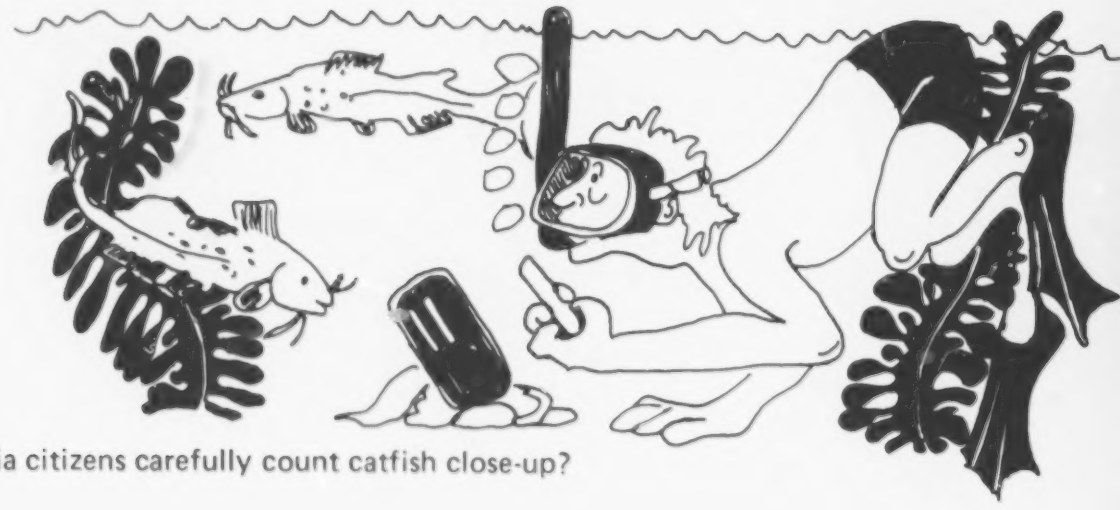
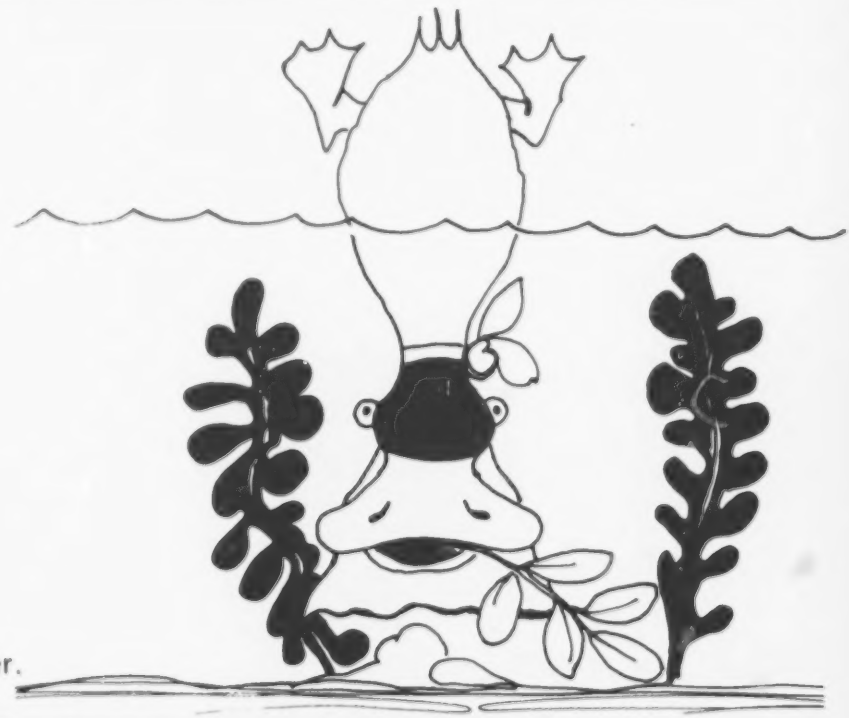
Cc



Can Concordia citizens carefully count catfish close-up?

Cc

Dd



Dabbling ducks don't drop dinner.

Dd

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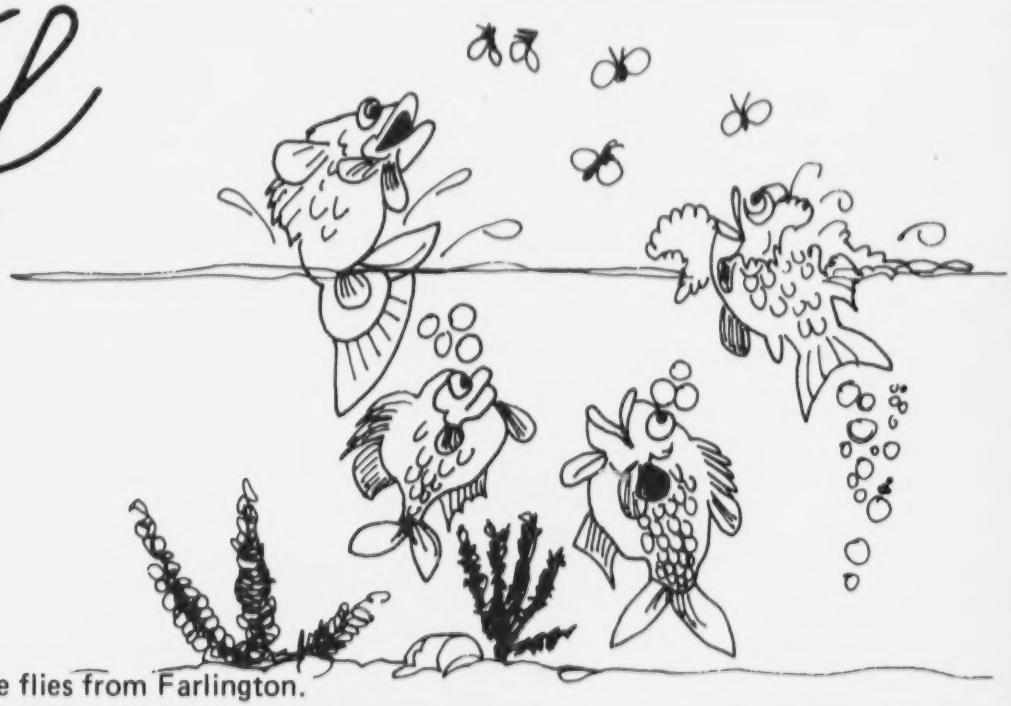
Ee

Emporia's economical egrets eagerly eat everything.

Ee

Ff



Four fat fish found five flies from Farlington.

Ff

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Gg

Grasshoppers gobble grass but geese get in gear in Great Bend.

Gg

Hh

Happy hunters have heart.

Hh

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KANSAS FISH AND GAME

Ii

Intelligent insects invest in insurance in Independence.

Ii

Jj

Jogging junebugs jump for joy over a jar of jellybeans in Jetmore.

Jj

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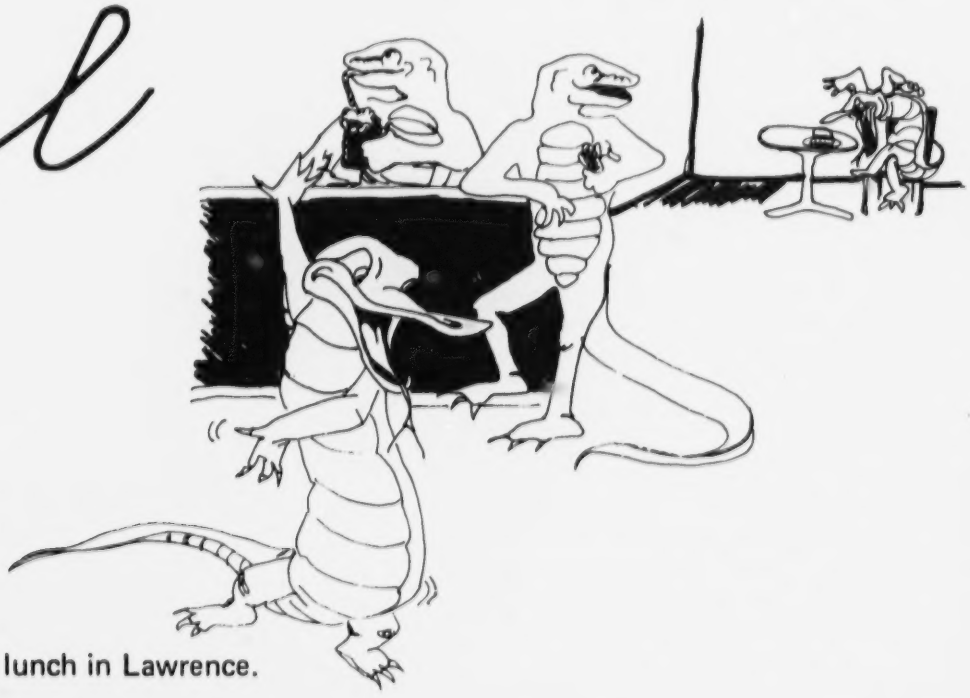
Kk

Kestrels keep kicking killdeer and katydids out of Kingman's kindergarten.

Kk

Ll



Loudmouth lizards lunch in Lawrence.

Ll

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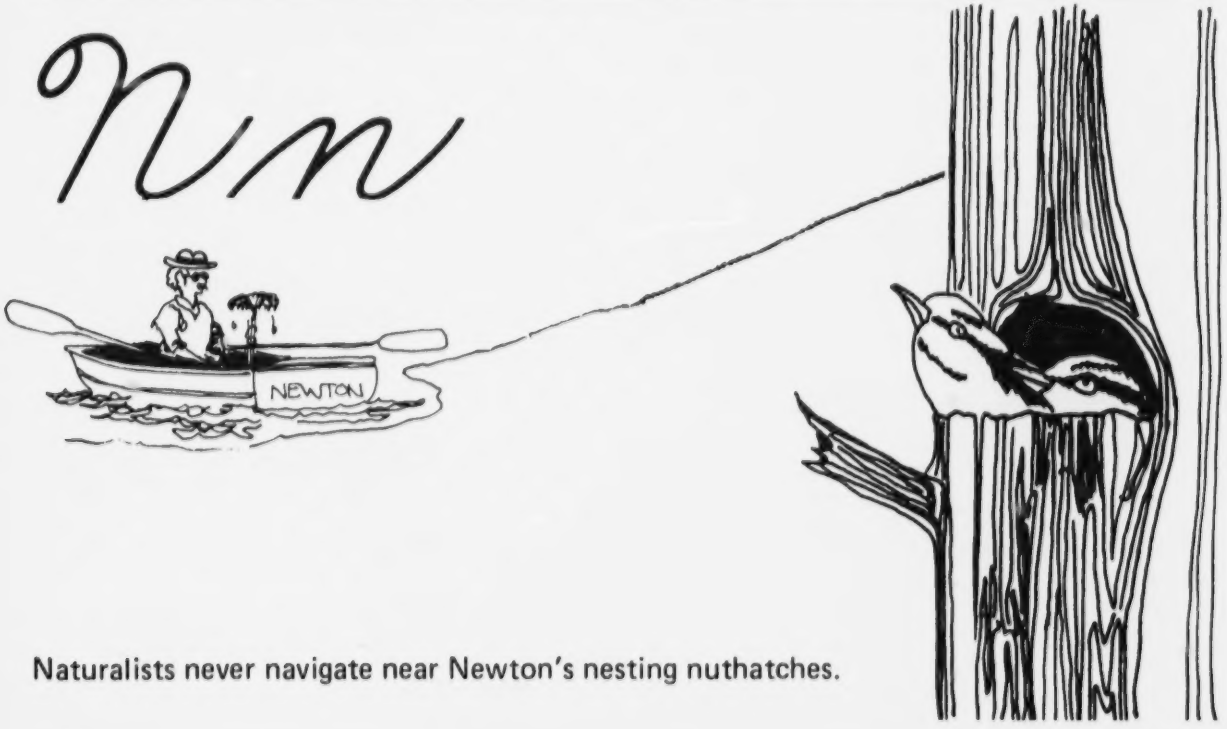
Mm

Many muscular muskrats might move McPherson.

Mm

Nn



Naturalists never navigate near Newton's nesting nuthatches.

Nn

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Oo

Owls operate on otters over Olathe.

Oo

Pp

Peppy prairie dogs perch perfectly on peaks in the plains.

Pp

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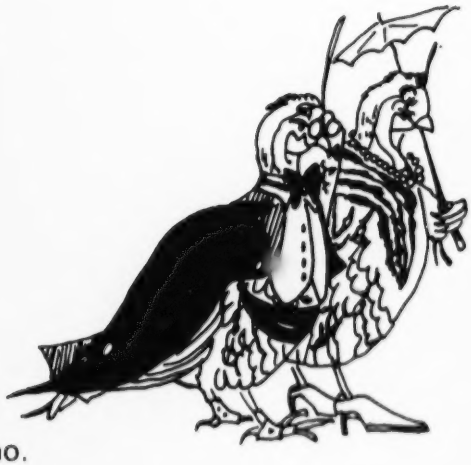
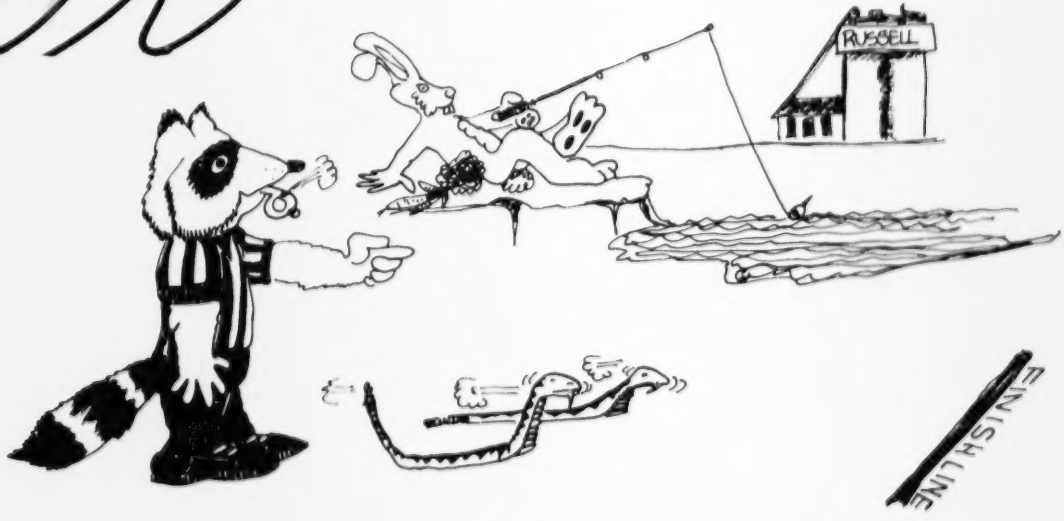
Qq



Quail are quite quaint in Quenemo.

Qq

Rr



Raccoons referee Russell's rattlesnake races while retired rabbits recline with rod and reel.

Rr

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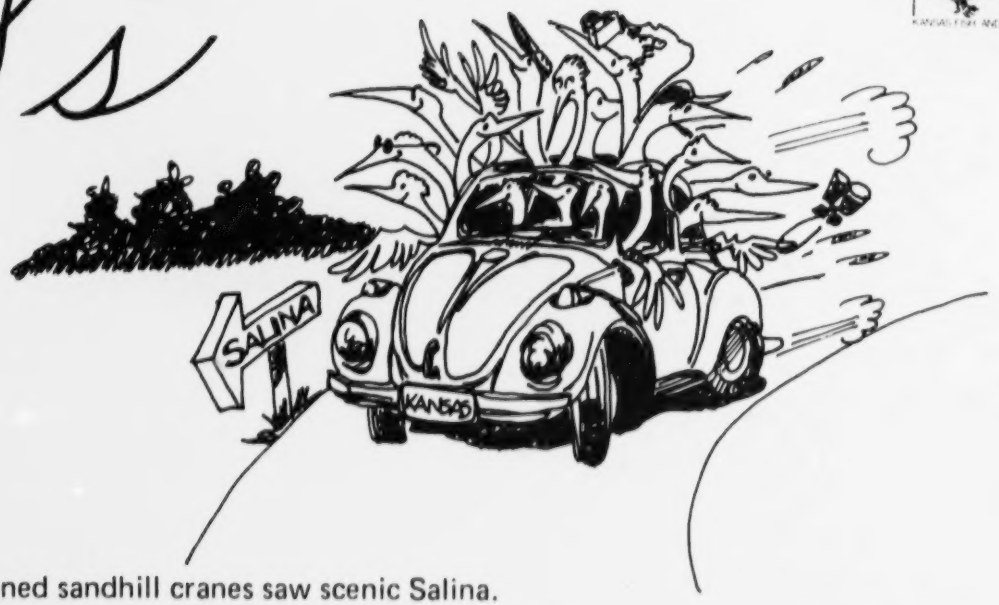
Ss



Sixteen sardined sandhill cranes saw scenic Salina.

Ss

Tt

A team of turtles try to tug two teal and tiny trout to Topeka.

Tt

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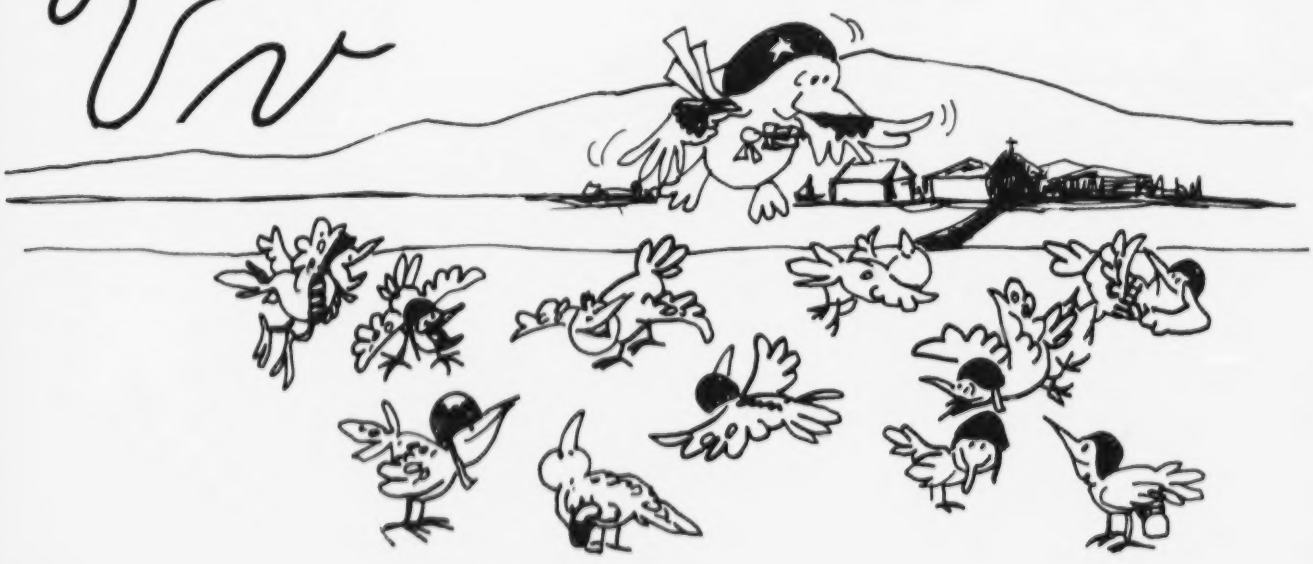
KANSAS FISH AND GAME

Uu

Uncouth ungulates usually unicycle with untuned ukuleles under umbrellas at the university.

Uu

Vv



Very vigorous vireos volunteered to invade valleys and villages near Vermillion.

Vv

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Ww

Wiggly worms worry while wading with Wakefield's walleye.

Ww

Xx

Xenops xerox x-rays of xenorus and xylophones at X-mas.

Xx

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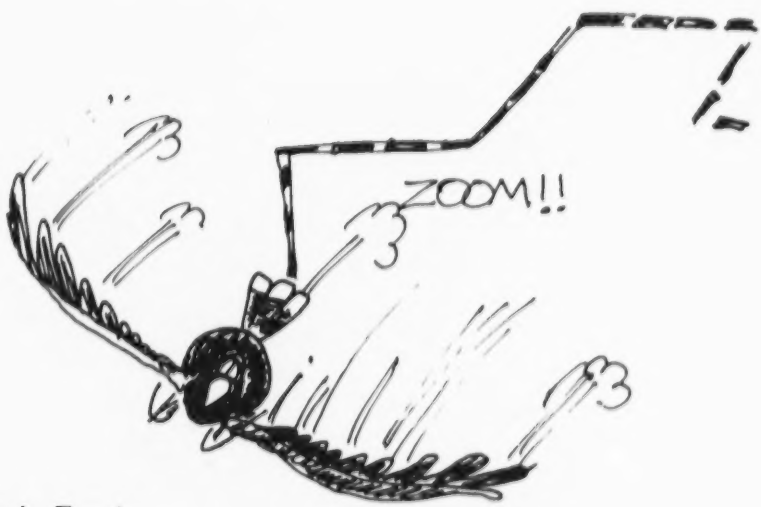
Yy

Yes, young yellowlegs yawned in Yates Center yesterday.

Yy

Zz



Zooming zebra finches zigzag in Zenda.

Zz

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HABITAT CROSSWORD

Habitat is the place where an animal lives. We studied four habitats in *Wildlife Needs a Place to Live.* See if you can solve the crossword from what you learned.

ACROSS:

1. Habitat must include food, cover, and ------ for wildlife.
2. The ------ is a special combination of water, plants, and land where muskrats and red-winged blackbirds live.
3. Pileated woodpeckers eat -------- they find by probing in the bark of trees.
4. We must learn to ------ the world with wildlife.
5. The place where more than one habitat meets another is called an ----. Many kinds of wildlife can find what they need here.
6. Channel -------- are popular Kansas fish. The adults like deep water with logs.
7. An interesting looking fish that is also called a "spoonbill" because of its unusual bill is the ----------.

DOWN

8. A ---------- is built to hold water. We have 25 in Kansas, and they are great places for fish.
9. The place where the prairie chicken dances is called the -------- ground.
10. Cities and ------ can be good places for wildlife, too. (Barn owls can live here and be helpful friends.)
11. Swainson's hawks will build their nests in trees or on the -------.
12. Swift fox have homes called ----.
13. You might find a great-horned owl in a --------- habitat.
14. The bird who shows orange sacs on his neck when he dances to find a mate is a -------- --------.
15. Grassland habitat is called --------.
16. Many birds build ------ of plants and twigs.
17. A prairie dog "neighborhood" is called a ----.

water
prairie
soil
dens
nests
town
ground
habitat
prairie chicken
shelter
booming
tracks
woodland
insects
reservoir
catfish
paddlefish
marsh
edge
ecology
farms
share
feathers
burrow

24

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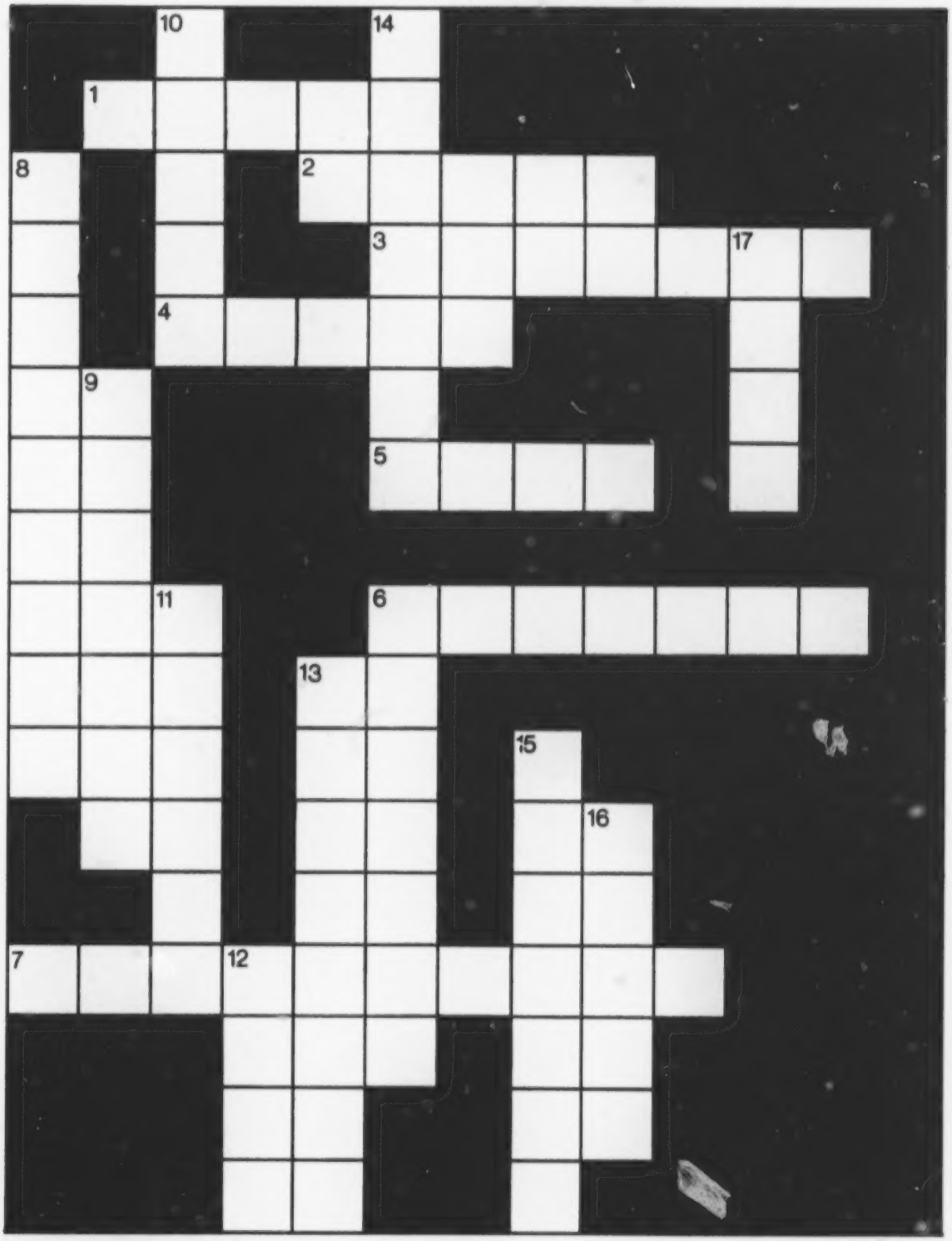
NAME _____

pg2

PUZZLE!



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WHERE DO I BELONG?

Write the name of the animals next to the habitat they are most often found in. Use *Wildlife Needs a Place to Live* if you need help. One has been done for you. (Some animals can be found in more than one habitat.)

jack rabbit
crappie
burrowing owl
red-bellied snake
pronghorn antelope
prairie falcon
bass
fox squirrel
red-winged blackbird
channel catfish
avocet
black-crowned night heron
prairie lined racerunner
ground skink
swift fox
red-eared turtle
prairie dog
scissortail flycatcher

pileated woodpecker
prairie rattlesnake
gray squirrel
plains leopard frog
great-horned owl
sandhill crane
prairie chicken
meadowlark
water strider
paddlefish
walleye
coot
water snake
bluegill
muskrat
sunfish
mink
ducks

WILDLIFE NEEDS A PLACE TO LIVE

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WHERE DO I BELONG?

NAME_____

WILDLIFE NEEDS A PLACE TO LIVE

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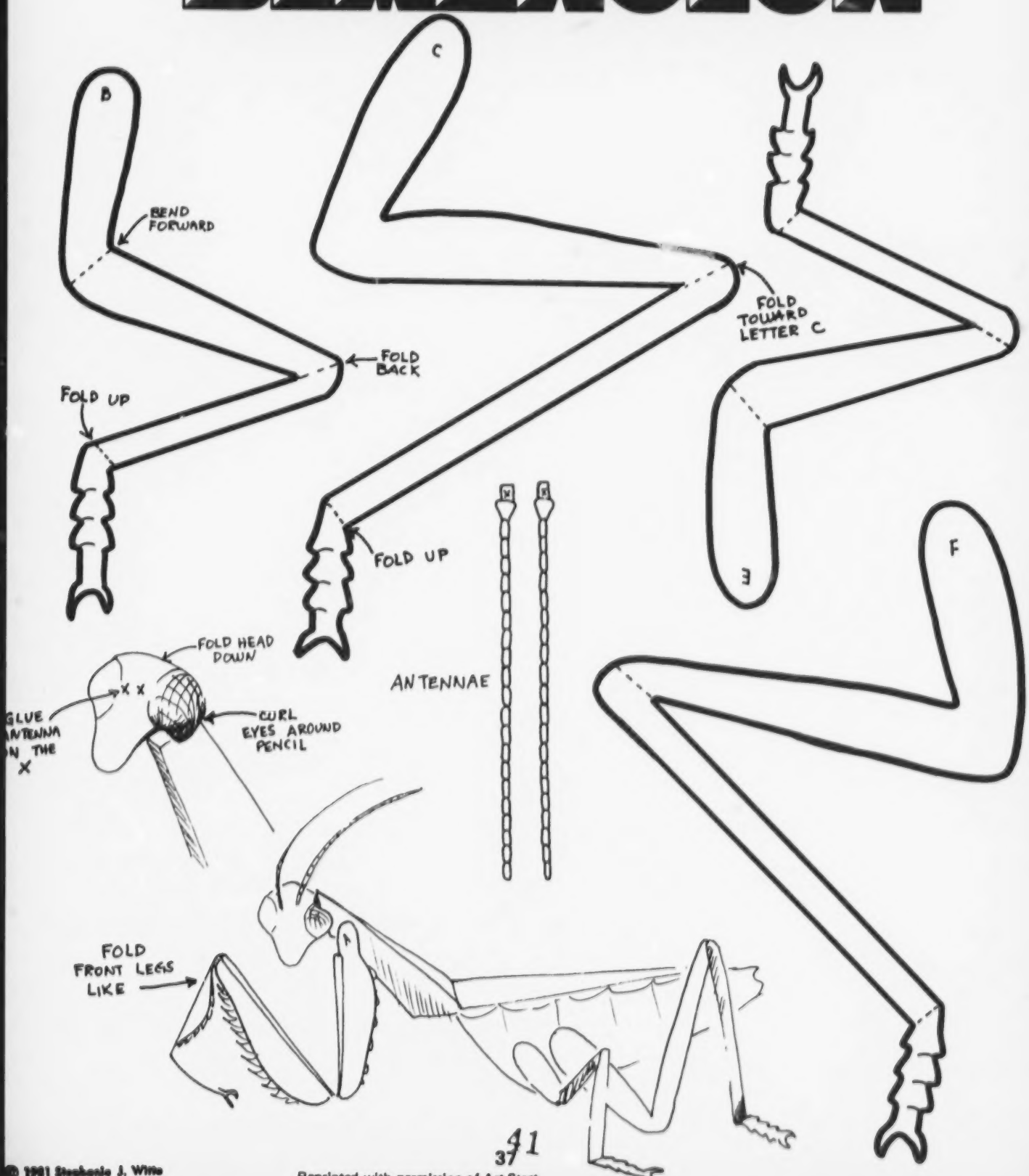
WILDLIFE IN ANOTHER DIMENSION



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VERTEBRATES VARY

All animals with backbones are **vertebrates.** Reptiles, fish, mammals, birds, and amphibians are all different kinds of vertebrates. Classify the vertebrates you learned about in *Wildlife Needs a Place to Live.* Put an R by the reptiles, F by the fish, M by the mammals, B by the birds, and an A by the amphibians.

coyote –

pheasant –

swift fox –

burrowing owl –

channel catfish –

plains leopard frog –

pronghorn antelope –

scissortail flycatcher –

– bluegill

– teal

– muskrat

– jack rabbit

– walleye

– prairie chicken

– red-eared turtle

– pileated woodpecker

Which animals in the booklet are not vertebrates?

NAME 28

NAME_____

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nature bingo

B I N G O

SOIL	CLOUD	FLY	BIRD SINGING	LEAF
PRAIRIE	WIND	TREE	SEEDS	AN ANIMAL MOVING
AN ANIMAL EATING	SPIDER	free	BUTTERFLY	FLOWER
FISH	GRASS	HOLLOW LOG	HILL	NEST
LAKE, STREAM OR RIVER	RAIN OR DEW	MUSHROOM	SHADOW	PINE CONE

42

CHECK OFF WHAT YOU SEE. YOU DO NOT NEED TO PICK ANYTHING.

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Mostly Misplaced Habitat Hoax

NAME_____

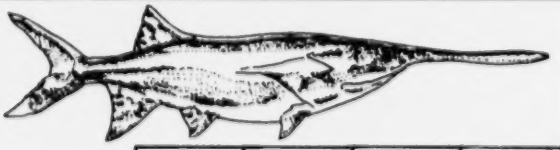
Directions: Wildlife has wandered off into some unusual places in this picture. See if you can find and circle all of the mistakes. (Hint: You should find 10 misplaced animals.) Check your work by sharing with a classmate. Where should the animals be?

wildlife education service
KANSAS FISH AND GAME

habitat is essential for wildlife.

Essential means necessary--something you have to have to live. Wildlife needs habitat to live. You have learned that wildlife lives in different kinds of habitat. Next to the blank boxes are pictures of animals that are found in a particular habitat. Write the name of the correct habitat in the blank boxes.

H
A
B
I
T
A
T



NAME _____ 26

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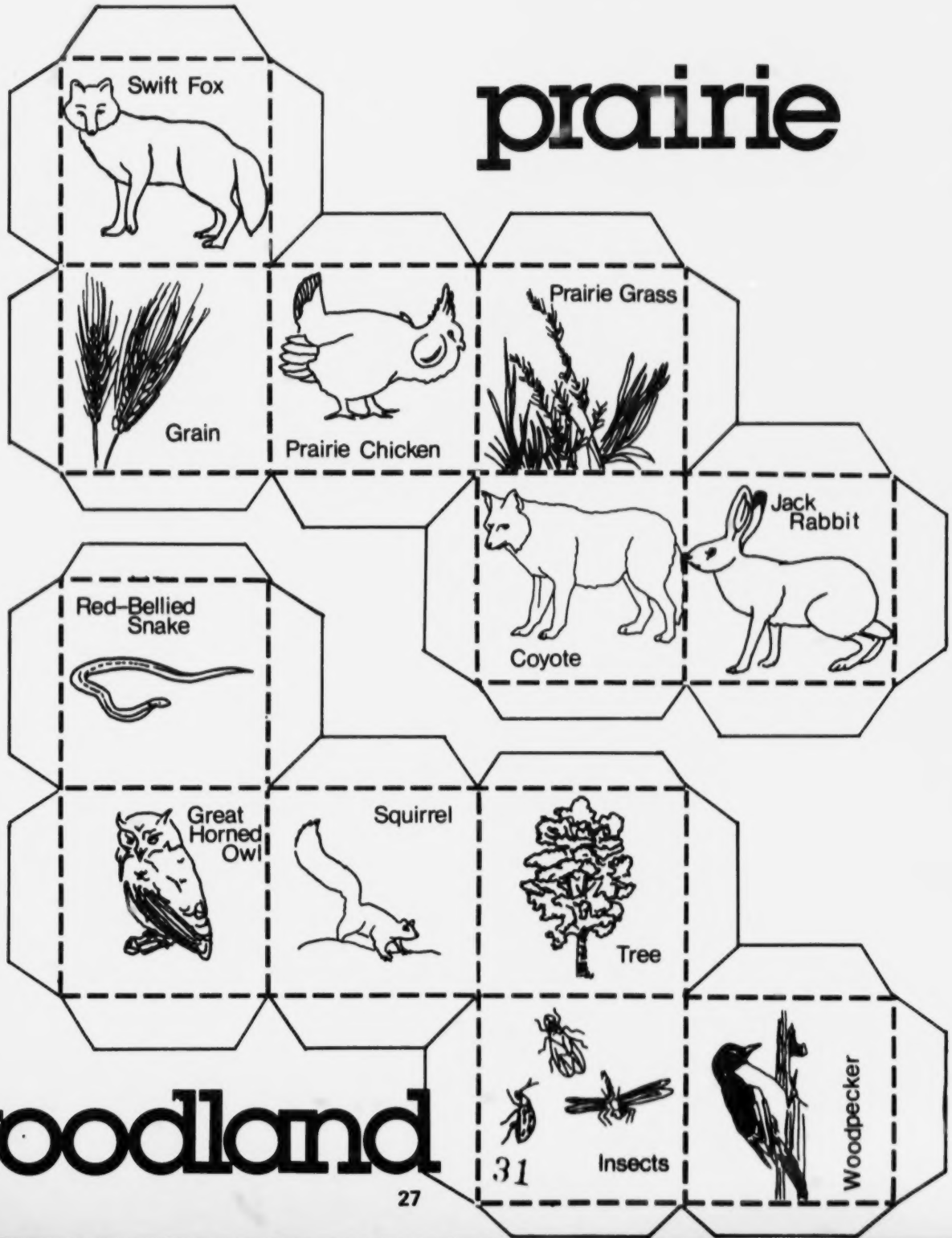
habitat cubes

Directions: Construct a habitat cube for each of the habitats we studied by cutting out the design below. Color each of the habitat pictures. Fold the tabs at the dotted line. Glue the tabs together to make a cube.



WILDLIFE NEEDS A PLACE TO LIVE

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KANSAS FISH AND GAME

habitat cubes

marsh

Muskrat

Red-Winged Blackbird

Crayfish

Cattails

Avocet

Mink

Coot

lakes,

Frog

Water Habitat

Paddlefish

streams & reservoirs

Channel Catfish

Water Strider

32

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KANSAS FISH AND GAME

NAME_____

mix 'n' match tracks

Directions: Read the hints next to each animal picture and match it to the correct animal track.

Coyote tracks look like dog tracks. The coyote's paws and claws form a familiar shape.

Skunks can leave behind a track as well as a scent. Their hind feet make a print like humans.

Beaver have special back feet that help them walk in soft soil and move in water.

Deer have hooves instead of claws. Hooves help in running.

Squirrels have little feet and toes that are adapted for climbing trees.

Raccoons leave tracks that look like your own handprint, only smaller.

Bobcats have retractable claws. Their print will show only the paw pad.

Rabbit feet are adapted for running and hopping. The back feet are longer than the front.

Foxes are smaller than coyotes but their tracks look like those of coyotes and dogs.

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KANSAS FISH AND GAME

Make Your Mark On Wildlife

NAME_____

Directions: Use an ink pad and your fingertips to make an animal from each habitat. Draw in the habitat background.

WILDLIFE NEEDS A PLACE TO LIVE

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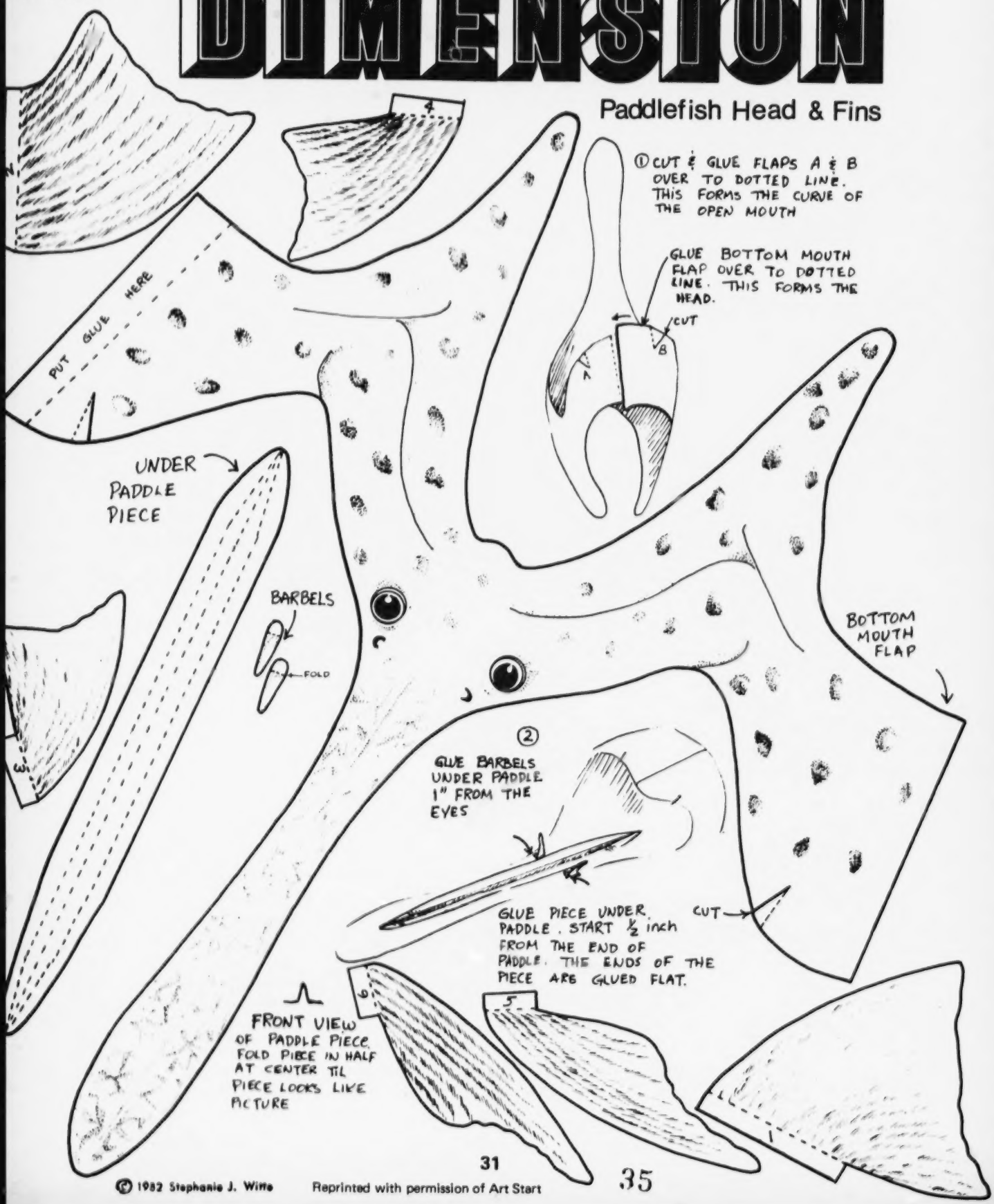
KANSAS FISH AND GAME

WILDLIFE IN ANOTHER DIMENSION

Paddlefish Head & Fins


① CUT & GLUE FLAPS A & B OVER TO DOTTED LINE. THIS FORMS THE CURVE OF THE OPEN MOUTH
GLUE BOTTOM MOUTH FLAP OVER TO DOTTED LINE. THIS FORMS THE HEAD.
CUT
A
B
PUT GLUE HERE
UNDER PADDLE PIECE
BARBELS
FOLD
BOTTOM MOUTH FLAP
②
GLUE BARBELS UNDER PADDLE 1" FROM THE EYES
GLUE PIECE UNDER PADDLE. START ½ inch FROM THE END OF PADDLE. THE ENDS OF THE PIECE ARE GLUED FLAT.
CUT
FRONT VIEW OF PADDLE PIECE. FOLD PIECE IN HALF AT CENTER TIL PIECE LOOKS LIKE PICTURE

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WILDLIFE NEEDS A PLACE TO LIVE

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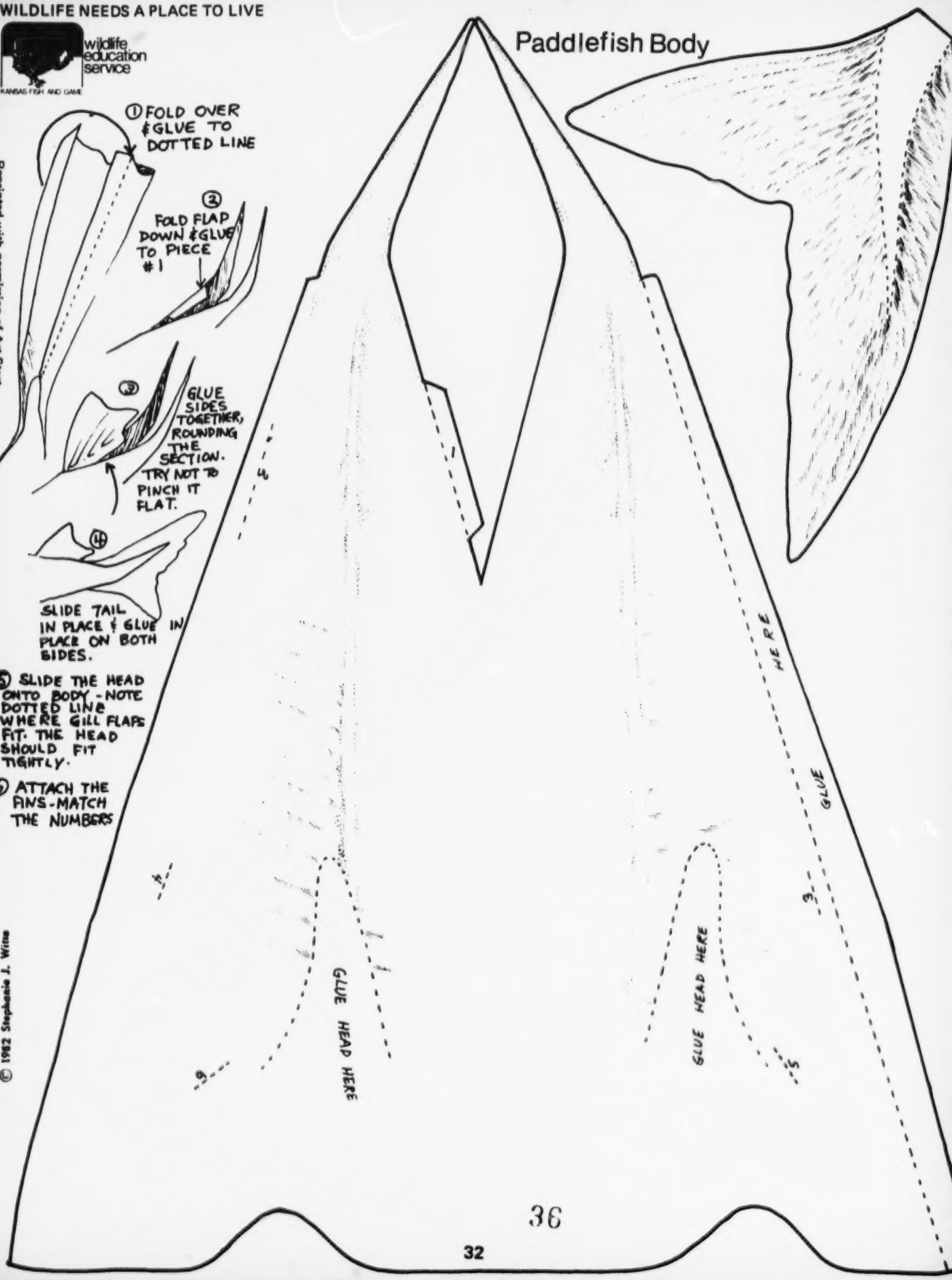
KANSAS FISH AND GAME

Paddlefish Body

① FOLD OVER & GLUE TO DOTTED LINE
② FOLD FLAP DOWN & GLUE TO PIECE #1
③ GLUE SIDES TOGETHER, ROUNDING THE SECTION. TRY NOT TO PINCH IT FLAT.
④ SLIDE TAIL IN PLACE & GLUE IN PLACE ON BOTH SIDES.

⑤ SLIDE THE HEAD ONTO BODY - NOTE DOTTED LINE WHERE GILL FLAPS FIT. THE HEAD SHOULD FIT TIGHTLY.

⑥ ATTACH THE FINS - MATCH THE NUMBERS



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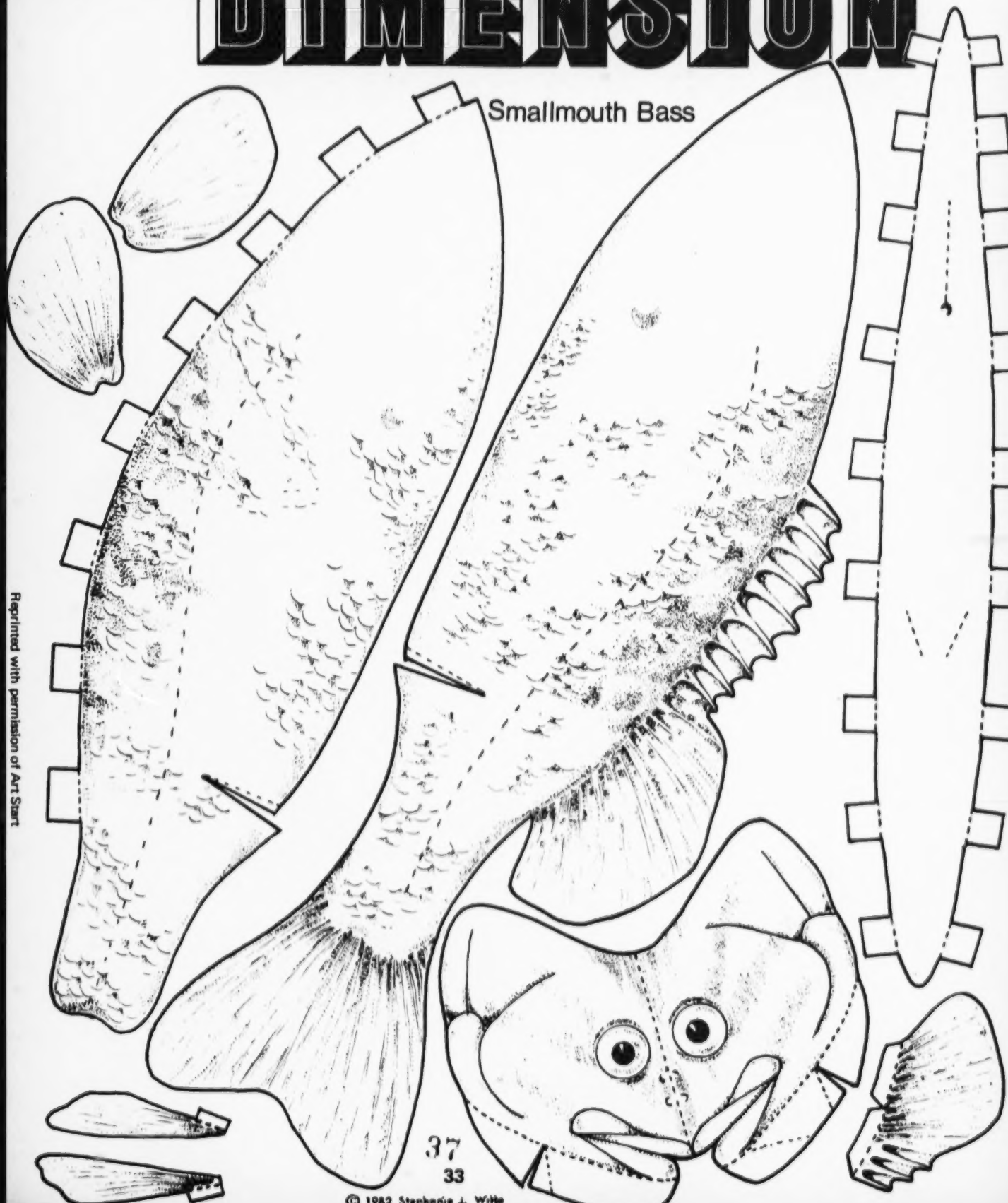
WILDLIFE IN ANOTHER DIMENSION



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Largemouth Bass

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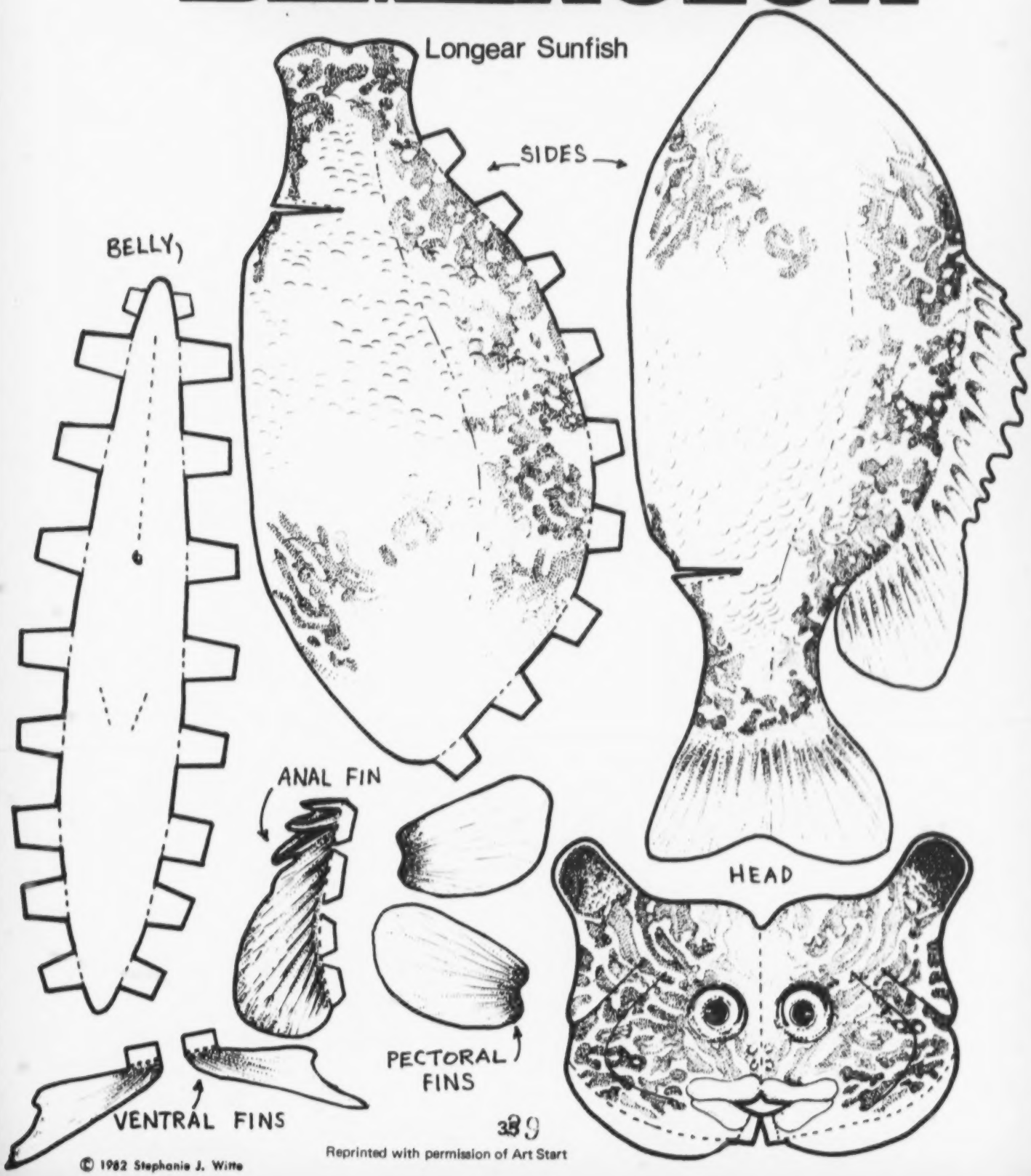
WILDLIFE IN ANOTHER DIMENSION



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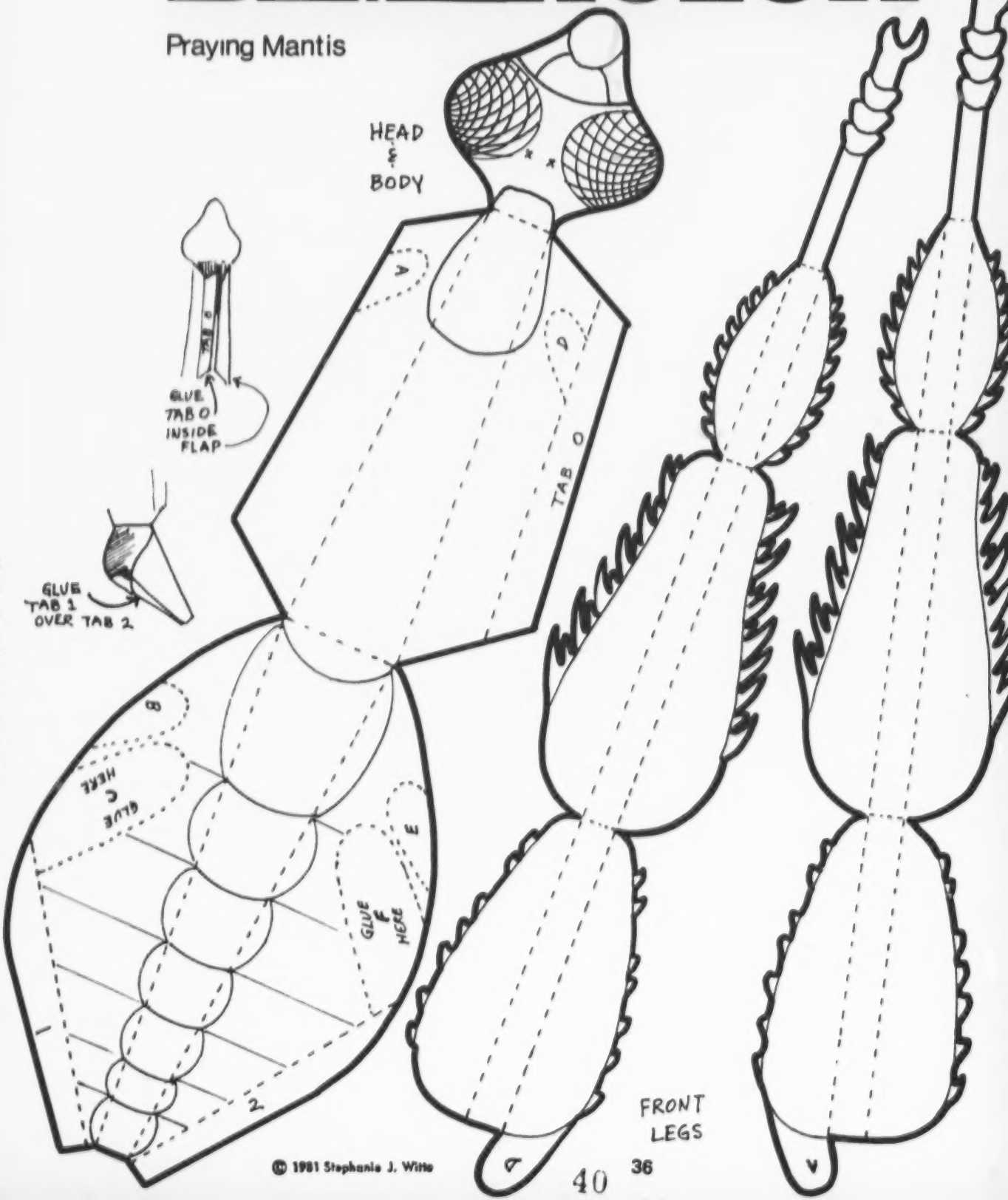
WILDLIFE IN ANOTHER DIMENSION

Praying Mantis



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Wildlife Research

Challenge Sheet:

Kansas Wildlife and Parks has research biologists who study wildlife in the state. You can do some wildlife research by using your library, encyclopedias, dictionaries, and other resource books. Complete two or more of the challenges below. After you've finished these, pick other wildlife topics to research.

1. On a map of Kansas, draw the major rivers and label them. What is happening to our rivers in western Kansas? Do you think Kansas will always have enough fresh water for people and wildlife? If not, what can be done now to save our water habitats?

2. Name 20 reservoirs in Kansas. Can you find them on a map of Kansas? What fish will you find in reservoirs and not in lakes? Why are reservoirs built?

3. Biologists survey (census) wildlife so that they know how many of each species (kinds) of animals there are in an area. Some animals leave traces, such as tracks and droppings, to help scientists estimate their numbers. Other animals are followed by radio waves from a radio transmitter attached to their bodies. Scientists also use bands on birds. The bands are usually attached around the bird's leg and have a special number to identify the bird. Some animals, such as ruffed grouse, make sounds that scientists use to estimate the number of animals. Choose one of these census methods, or another method, and research it. How accurate is the method? What kinds of animals are studied with this method? What do biologists do with the information they collect?

4. Kansas is an agricultural state. That means that farming is very important in the state. Some kinds of wildlife get along well near farms. Other kinds of wildlife once lived in areas that are now farmed. They can no longer live there because their habitat has been changed. Make a list of wildlife that ADAPTS to life near farms, and another list of wildlife that does not adapt as well to farm habitat. Why do you think some wildlife adapts more easily than others?

5. Animals make homes from all kinds of things, such as twigs, grasses, and soil. Pick an animal home, such as a bird's nest, and try to build one on your own. Compare yours with the real one. Then, build a home for an imaginary animal and write a story to go along with it.

6. Research biologists have reintroduced some species (kinds) of wildlife back into Kansas. REINTRODUCTION means they bring animals back to Kansas that once lived here. The antelope, wild turkey, sharp-tailed grouse, swallow-tailed kite, and mountain plover have all been reintroduced into Kansas. Pick one of these animals and find out all about it. Why weren't the animals living in Kansas any longer? How are they doing after they are reintroduced? Where did Kansas get the animals to reintroduce them?

wildlife education service
KANSAS FISH AND GAME

Habitat Word Review

NAME_____

Match the words with their meanings. If you answer all the sentences correctly, the answer to the mystery sentence will be in the circles.

After you have completed the sentences, circle any suffixes or prefixes you see on this page and underline all the compound words. Some have been done for you.

prairies
woodland
cover
shelter
Kansas
animals
habitat
edge
share
reservoir
marshes
care

1. People who are concerned about their environment ○––– enough to think before they change it.

2. Habitat includes food, water, and –○–––.

3. Wildlife means all wild living –○––––––.

4. Wetlands where cattails, muskrats, mink, and red-winged blackbirds live are called ––––○–––.

5. When two or more kinds of habitat meet, they form an ––––○.

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KANSAS FISH AND GAME

Habitat Word Review [cont.]

6. Grasslands where pronghorn antelope, jackrabbits, and meadowlarks live are called _____.

7. A structure built to hold water is a _____.

8. People need to _____ the world with wildlife.

9. Another name for cover is _____.

10. Your back yard, playground, school, and house are part of your _____.

11. A place with trees and shrubs where squirrels, great-horned owls, and pileated woodpeckers live is called a _____.

12. The state whose capital is Topeka and has prairie, woodlands, streams, lakes, reservoirs, and marshes for habitat is _____.

Mystery Sentence

_____ means the wise use of our natural resources.

How many smaller words can you make from the mystery word? (You can use a letter more than once.) Write the words on the back of this sheet or on another sheet of paper.

wildlife education service
KANSAS FISH AND GAME

Supplementary Activities and Approaches

Listed below are approaches for using the student booklet and worksheets. Additional activities have been included for those teachers who are interested in furthering their study of wildlife. These activities can be done in a variety of curricula areas and are listed by subject. Basic skills will be practiced while students learn more about wildlife. Many of these ideas may already be familiar; others are new. A few of the activities were adapted from *Multidisciplinary Wildlife Teaching Activities*, by William Hernbrode, and *Sharing Nature With Children*, by Joseph Cornell. Check the Wildlife Reference Center for further activity sources. There are several excellent activity guides listed under Miscellaneous Books.

Language Arts

—The story script may be taped so that students may listen while they read.

—After reading the story, have your students make up their own stories or poems about the animals they have seen in the booklet. Students can act out their stories or draw pictures to express their ideas. Have the children think about what it would be like to live in a world without wildlife.

—The words in the script, and especially those listed on the vocabulary page, can be used on a spelling list. If you have an existing list, these could be added as bonus words.

—Use the booklet as a supplementary reading text to study compound words, blends, vowels, syllabication, affixes, parts of speech, etc.

—Sequencing skills can be practiced if students draw pictures of wildlife in a comic strip format. Cut the pictures apart, exchange with a friend, and see if that person can reassemble the story in the correct sequence.

—How many words can students find that rhyme with the words in the vocabulary list?

—For more handwriting practice, have students write the wildlife alphabet sentences from the worksheet pages on separate sheets of paper. Students can create their own wildlife alphabet. Suggest that they use examples of animals found in Kansas.

—Have students list natural things that begin or end with each letter of the alphabet, and make sentences from these words.

—If you read daily to your class, why not include stories or poems about animals and the environment, especially those related to Kansas? Recommend your favorite selections to the school or public library for their future purchases.

—Write plays or skits about wildlife and its habitat. Research the animals so that the role plays are true to life.

—Exchange letters with pen pals from a class in another state or region of Kansas. Choose an area that has habitat different from your area. Student's letters should include descriptions of wildlife and habitats near their homes. What are the similarities and differences?

—Play an animal name game. Arrange children in a circle with one player in the middle. This center person points to a player and says, "mammal" (or bird, reptile, fish, insect, amphibian). The players must name animals from the designated group by the time the center person counts to 10. An animal cannot be named twice. If a player is unsuccessful in naming an appropriate animal, he or she becomes the center person.

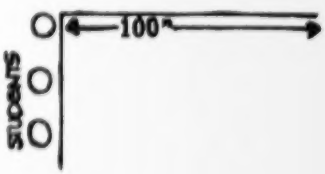
wildlife education service
KANSAS FISH AND GAME

—Look at the vocabulary list at the end of the booklet and write the words so the class can see them. Assign each child a letter that is found in one of the words. More than one child can be a particular letter. The children are instructed to find other people who, when combined, will form a word from the list.

—Add variety to your spelling bees by practicing the vocabulary words at the end of the booklet. Instead of a regular spelling bee, though, have one child call out a word and at the same time throw a frisbee or softball out to the class. The player who catches the object spells the word. If correct, he or she gains a point. If incorrect, the object is given to the person closest to him or her. The object is passed until the word is correctly spelled, then returned to the caller.

Science

—Take a 100-inch hike by measuring off an area approximately 100 inches long. Have students spread out along a line that is perpendicular to the first line. They move on hands and knees to count all the small animals that they find in the 100-inches. Use magnifying lenses, if available. Compare and discuss within the group.



—Have a "touch and see" table in your classroom with tree bark, rocks, bones, shells, etc. that your students can explore in their free time. Add items that the children bring in. If you don't have room for a table, have a "touch and feel" box of appropriate size. Cut an opening for hand and arm and place objects inside that students may identify by touch only.

—Mark off a 40-to-50 foot trail and place 10 to 15 man-made objects along it. The children walk silently along the trail trying to spot (but not pick up) as many of the objects as they can. When they reach the end of the trail, they whisper the number of objects they saw to you. If they missed any, see if they can find them on a second try. End with a discussion of camouflage, and natural and man-made things. What examples of camouflage did they find?

—Build a class terrarium so that children can observe animals such as snails, earthworms, beetles, etc. Children can observe the interaction of animals with plants. How are plants and animals alike, and how do they differ?

—Each student builds a nature trail for an ant or other small animal. They find ten interesting features in their area and mark them with twigs or popsicle sticks. These are points of interest or stations on the trail. The trail is observed from the perspective of the small animal. Imaginations should be used to lead other students as spectators on the trail. An area of grass might be a jungle; a rock could be a cliff or mountain. Spectators follow the trail on hands and knees to observe the small aspects of the environment. Everyone should go on at least one tour of another student's trail. Discuss the word "micro" and the importance of small living things.

—To better understand the insect world, observe a variety of insects in your schoolyard. Attract them with strips of fabric soaked in sugar water or molasses. Notice the different sizes, shapes and adaptations. Compare insects from as many habitats as possible.

—Have an ant colony in a narrow glass case. Students can easily see the underground world of the ant. What do they eat? How do they communicate? How do they use their antennae?

—Students pick the native animal of their choice. Next, they draw from a stack of cards that say the following words: prairie; woodland; marsh; lakes, streams or reservoirs. They must determine if their animal is appropriate for that area. Why or why not? Share their conclusions with the class.

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—Play the food web game. Each participant wears the name of a plant, animal, or element (air, sun, water or soil). The name tags can be decorated with a picture of the plant, animal or element. The name tags are made from 5X7 cards and can be easily worn if a piece of yarn is attached to go around the neck. Use animals and plants found in your area; some suggestions are; fish, cricket, snake, mosquito, owl, bluejay, turtle, bobcat, mushroom, trees, poison ivy, dandelion, etc. Have the group form a circle close enough together so they can read the other name tags. The person labeled "SUN"

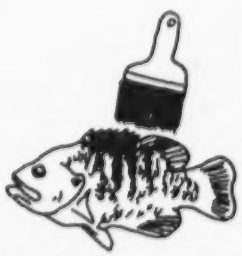
begins the game. He or she hangs onto the end of the yarn and passes the ball of yarn to any other player who has a direct need for the sun. The player who receives the ball of yarn looks around the circle for a player he or she needs in order to survive, or a player who depends on him or her for survival. He or she holds onto the strand of yarn and passes the ball to that next player. As the game progresses, discuss the relationships between the members of the web. Try to get all the players involved and discuss why the elements and lower level organisms seem to have more yarn in their hands (therefore needing to have more organisms at that level than at the upper levels.) Before enthusiasm wanes, discuss what impact people have on the food web. How does draining a marsh or pond, fire, disease, and restoring habitats affect the food web? Of course, we have some positive and negative impacts and the group might consider what they can do to keep the food web in a healthy state.

—Do outdoor challenges with students in groups of 2 or 3. Each team is given a challenge card. Possible challenges include: find 10 signs that wildlife is near; find 5 different seeds; find 5 plants that provide food for birds; find 5 objects with different shades of green (brown); find 5 signs that people are around; find 3 animal homes; find 5 objects, each of a different color. Gather the group together after 10 to 15 minutes and display collections and discuss. Care should be taken not to damage the environment while collecting.

—In your schoolyard, set up a platform about four feet off the ground. Place pieces of string, yarn, cloth, small sticks, and other items that birds might use to build a nest on the platform. Keep records of which items are taken. Do the birds seem to choose one item over another? The colored yarn and string may be able to be seen in the nests in the area.

—Take a census of natural and man-made things in your schoolyard. Divide the natural list into plants and animals. Take another census of living and non-living things.

Art



—Make fish prints. Collect several small, whole fish that have scales, fins, and heads. Sunfish, bluegill, or crappie are good choices. The fish should be cold until you are ready to begin. Gently wash and dry the fish, being careful not to alter the scales or fins. Spray one side of each fish with hairspray. Use a flat, wide brush and carefully stroke acrylic paint over every part of the fish. Wipe color off of the eye and lift the fish onto clean newspaper, paint side up. Place a trial sheet of paper on top of the fish and hold in place with one hand. Press down on the paper with the other hand, being careful to touch all body parts and not to let your paper slip. Slowly lift the paper. If the print is blurred, too much paint has been used. The print will be faint if the paint was too dry, or if too little paint was used. Paper towels may be used for trial printing. Parchment or cloth can be used to produce an interesting product.

—Design wildlife bookmarks or book jackets. Cover surface with clear contact paper for durabilty.

—Construct nature mobiles. Gather sticks or branches to support the mobile and attach natural or un-natural objects with string or yarn. These objects can be collected while on a hike, but care should be taken that damage is not done to the environment. Students can hang their mobiles in the classroom or take them home to share.

wildlife education service

—Build dioramas of animals in their habitat. Use modeling clay, shoe box, fabrics, paint, etc.

—Build an animal home, such as a bird nest, by using materials students can gather on the school ground or in the classroom. Each student or group can build an animal home for their favorite animal or an imaginary one. Discuss what the animal's needs are. Compare the home with one built by an animal. How is the animal adapted for building its home?

—Make plaster casts of animal tracks by first finding mammal or bird tracks. Make a collar from construction paper to surround the track so that the plaster is held in place. Combine plaster with water until a pancake consistency is reached. Place the collar around the track. Pour the plaster into the collar and wait 15 to 25 minutes for it to dry. A paper clip can be inserted in the plaster cast before it's completely dry, so that the finished cast can be hung on a wall. Identify the track with field guides. What can you tell about an animal from its track?

—Build animal models from rocks or potatoes. Add pipe cleaners, construction paper, buttons, or natural objects, such as seeds and leaves to complete the creatures.

—Make jigsaw puzzles from the children's animal drawings or from copies of the booklet drawings.

—While hiking through different habitats, collect natural objects such as seeds, pine cones, dead twigs, dried mushrooms, etc. to make a nature picture or class collage. Items can be glued to cardboard and may be separated by habitat to form a three-dimensional habitat artifact collection.

—The worksheets include three-dimensional models of a few of the animals mentioned in the booklet. See if you or your students can design other animals by using these as patterns. You may want help from volunteers when children are working on these projects.

—Wildlife is not only a variety of colors and shapes but also different patterns. Notice the interesting patterns in butterflies, fish scales, spider webs, feathers, etc. Combine these designs in a drawing or painting.

—Make spider web prints by spraying both sides of a web with quality white enamel spray paint. Carefully place a sheet of black construction paper against the web. Cut the support strands and display your web. For more activities and information on spiders, see May/June 1982 "Nature's Notebook" in *Kansas Wildlife*.

—Make wildlife sculptures from tumbleweeds, sand, or snow. Paint the finished sculpture with dilute tempera in a spray bottle or with spray paint. Details can be added with a paint brush or additional materials such as fabrics.

Industrial Arts

You can attract wildlife to your home and schoolyard if you provide habitat. Here are some easy-to-construct feeders that will bring enjoyment during the winter.

—Make bird feeders from dried grapefruit rinds or coconut shell halves. Hang them from a branch with string. Fill with seed.

—Hang sunflower heads or thistles from branches. Set aside a plot at home or in the schoolyard to grow them.

—String popcorn, peanuts and cranberries and drape around a tree.

—Press peanut butter into a pine cone and roll the cone in a mixture of bird seed. Hang with string from a tree branch.

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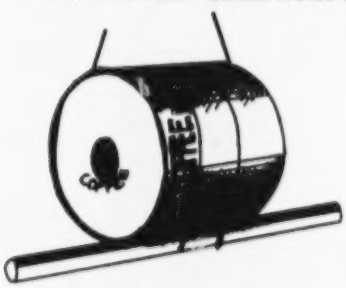
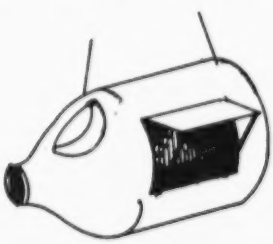
—Make a feeder for small birds with a coffee can, wire and a dowel or branch. Cut out the bottom of the can. Carefully cut out two 2-inch holes in the center of two plastic lids. Put the lids on the can. Hang the feeder horizontally by running wire through small holes in the lids and through the can. Attach a stick or dowel as a perch.

—Recycle detergent and bleach bottles to make feeders. Thoroughly clean the containers. Hang the detergent bottles vertically after cutting two circles the size of a 50-cent piece in their middles on each side. Slide a perch through nail holes below the opening. To make a horizontal feeder from a bleach bottle, cut 6-inch long and 4-inch wide flaps in the side of the bottle. Prop these open with a twig. Attach a dowel or twig perch and hang with wire.

—Use a half-gallon milk carton for a feeder. Cut out an opening for feed about 1¼ inches deep. Hold up the roof with a straightened paper clip inserted in the side of the carton and the roof. Bend the clip to hold the roof in place. Reseal the carton with a stapler and hang with a wire, or set feeder on a windowsill. Small holes can be made in the bottom of the feeder to let rainwater out.





- Suet feeders are easy to make from an old onion bag or nylon net. Open the bag and fill it with suet (animal fat) from the grocery or meat market. Tie the bag shut and hang from a tree branch.

—Build a log feeder from a dead branch about 15 inches long and 3 inches thick. Nail bottle caps onto it. Attach an eye bolt into the top of the log to hang the feeder vertically. Fill the caps with a peanut butter-bird seed mixture. An alternate method is to drill holes in the log and fill them with a mixture of bird seed, peanut butter, and ground suet.

—Two aluminum pie pans can be combined with one 8- to 10-inch dowel and two jar lids to make a feeder. Place a metal jar lid in the center of a large aluminum pan and another inside a smaller pan. These lids will add weight and support to the feeder. Nail one end of the dowel to the small pan and lid arrangement. Attach the top of the feeder (large pan and lid) to the other end of the dowel with a nail or eye bolt.

It is very important to continue feeding the birds once you begin in the winter. The birds will learn to depend on you for food until they find other sources of food in the spring. If you stop feeding during the cold weather, the birds may suffer.

—Keep a record of the birds you see and their behavior. What are the different birds' favorite foods? Have the class bring in left over bread crusts, oatmeal, corn, unsugared cereals, etc. to fill the feeders. Most meat markets will give suet away or sell it inexpensively. Ground suet is a good addition to the seed mixtures. The fat will help the birds withstand the winter cold.

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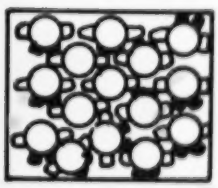
KANSAS FISH AND GAME

Mathematics

—Some animals can be helpful in determining the approximate temperature. During warm weather, crickets chirp rapidly and at a high pitch. In cooler temperatures, the chirps slow down. Use the following formula on a day when the temperature is between 55 and 100 degrees Fahrenheit.

T=Temperature
C=Number of chirps in 15 seconds
T=C + 38

Reverse the problem to determine C. Take the temperature where the cricket is located.



—Demonstrate the effects of lack of space and crowding with the following activity: Place an old blanket, sheet or tarp outside or on the floor. The children get off and you fold the blanket in half. Measure the new area and have the children get back on the blanket. They may have to work at getting in the space. Have them get off and, once again, fold the blanket in half. Measure the new area. Have the students attempt to fit. They should use their imaginations to get most of the children on. Continue the procedure until only one person fits. Have the children compare this situation with that of wildlife and habitat loss. Wildlife and people need space.

—While on a hike, find animal tracks in the mud or snow. Measure the distance between tracks of an animal. Is the distance longer or shorter if the animal is running? What direction is the animal coming from? Compare with human tracks.

—If a pair of Canada geese has 6 goslings a year, how many geese would they have produced in 2 years, 3 years, 4 years, 5 years, 6 years, etc. Assume no mortality. Consider the natural situation with mortality of 3 goslings each year and then complete the problem.

—Divide the class into teams to count vertebrates and invertebrates. Count the number of different invertebrates and vertebrates you find in a square foot of the schoolyard. Estimate the number living in a city block. Estimate the number living in an equivalent area of woodland or prairie. Compare the quantity and diversity between city, woodland and prairie plots.

—A stag beetle can lift 120 times its weight. If you could lift at the same weight ratio, how much could you lift? (120 X student's weight)

Social Studies

—Make a wildlife map with a large outline of the state and pictures of animals found in Kansas (from magazines or drawn by students). Have students place the animals where they are found in the state. What affects the distribution of wildlife? Discuss rainfall, temperatures, plant life, terrain, habitat types, etc. Compare Kansas with other states. This activity could lead to or enhance a study of the United States.

—Use the wildlife alphabet sheets to study the locations of cities and towns in Kansas. Find the towns that are mentioned on the map. Students measure the distance from that town to their hometown. What direction would they need to travel in order to reach the town mentioned?

—Use the enclosed guide to reservoirs in Kansas to study the regions of the state. Have students find the reservoirs on a state map. How many have they visited? How far away are the reservoirs from where they live? At 55 mph, how long would it take to get to the closest or furthest one?

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—Divide the class into four groups: prairie; woodland; marsh; streams, lakes, and reservoirs. Each group makes a report of the kinds of animals found in the habitat. The report should also include a map of Kansas showing where the habitats are found, and list some of the common vegetation for the area. Reports are presented orally to the rest of the class.

—Have your students list all the things that they need to live. How does this list compare with that of wildlife? Which items overlap as needs of humans and wildlife? Can the children revise their list and do without some things? Stress food, water and cover as the essentials for wildlife and humans. Try to differentiate between what we need to survive and which items are for a "better" standard of living.

—Students list the habitats they live in, such as home, school, etc. What is their favorite habitat? Their least favorite? Which habitat do they spend the most time in?

—Ask the children to observe and list the changes people have made to habitat. Discuss their lists and ask how they think each of the changes has affected wildlife. If they had control over the past, how would they have acted differently? If they could control the future, how would they plan to manage for people and wildlife to share the world?

—People use natural resources at a fast rate. Recommend to your students that they recycle and conserve natural resources as much as possible. Organize a paper or aluminum recycling project for you school or district.

—Learn more about the seasons by keeping a record of changes throughout the year. Have the class pick a special spot on the schoolgrounds, or allow each child his or her own location. Observe the changes that take place through the year. How do shadows change with the time of day and season?

Music

—There are many songs dealing with the environment or specific animals, such as "The Ants Go Marching." Find some other songs that deal with wildlife, or put a poem to music.

—Make a cassette tape of animal sounds. Bird songs are available through the Wildlife Reference Center. See if students can identify some common calls or songs. Tap out the rhythm of the animal sounds on your desk top or by clapping your hands.

—Have children listen to bird or other animal sounds. Then have them design an animal they think would make that sound. Later, identify the animal and compare the real animal with the imaginary.

—Write new wildlife-related lyrics to old songs.

—Some birds, such as the mockingbird, can imitate other birds. How well can you "mock" the songs? Put words to the beat of the bird songs and calls.

—Which animals would make good sopranos, altos, tenors, or basses? Listen to tapes, records or the animals themselves while on a walk.

—Some animals make specific calls, warning signals, or songs. Design instruments that sound like animals. Use wood, sandpaper, glue, construction paper, and odds and ends to create the sound.

Physical Education

—When students are running or playing on the playground, have them pick up litter. Their ticket to get back inside is four pieces of litter.

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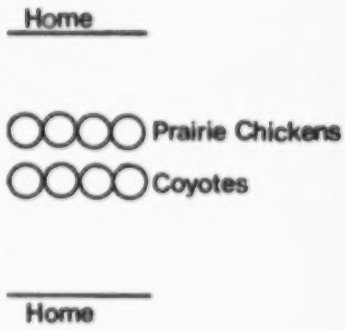
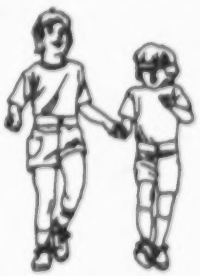
—Review what you've learned about wildlife and get some exercise by playing "Prairie Chickens and Coyotes." Divide the class into two equal teams. One group is The Prairie Chickens; the other is The Coyotes. The teams line up facing each other about 3 feet apart. Home territory is marked with a line 15 feet behind each team. The group leader or teacher makes a statement such as, "Wildlife needs water, food and cover to live." If the statement is true, the Coyotes chase the Prairie Chickens, trying to catch them before they reach their home territory. If the statement is false, the Prairie Chickens chase the Coyotes. Any players who get caught become members of the other team. Some questions might cause confusion. The leader should stay quiet until after the commotion has ended and then discuss the answer with the group. Sample questions might include: "Reservoirs are built to hold water." (T) "Paddlefish are found in all Kansas rivers." (F)



—Play porcupine tag. The porcupine is "it" and can move easily while the other players are required to hold one leg and hop. They can be tagged by the porcupine if they let go of their leg. If caught, They become the porcupine.

—Play "Prairie Rattlers." The group forms a circle around two blindfolded members, making a "snake pit." The blindfolded players are the prairie rattlers. Their rattles are tin cans with stones in them. One snake is the pursuer, who has 5 shakes of the rattle to find and touch the pursued. The pursued must respond immediately after each shake from the pursuer. The pursued can shake as often as he/she dares. The players forming the snake pit keep track of the rattles and cheer. The snake pit may change in size and shape to add variety.

—Take a "blind trust" walk. Students work with partners, each having a chance to be blindfolded. While "blind" they are carefully led to explore surrounding areas using their other senses. The leader may have the blindfolded person experience touching a feather or tree bark, smelling the soil, listening to the wind, etc. A group can be led together by having participants hang onto a rope throughout the course. Conclude the activity by seeing if the participants can retrace their steps when the blindfolds are removed.



—There are dances named after animals, such as the bunny hop and fox trot. Try creating your own animal dances. Begin by demonstrating and practicing the bunny hop and fox trot. Give each group of 5 children an animal dance name, such as Buffalo Bump, Squirrel Swing Step, Rattlesnake Rumba, Porcupine Polka, Turkey Two-Step, Catfish Crawl or Turtle Tango. Each group performs its dance in front of class using the music of its choice. Stress that students use creativity in developing their dance.

—Divide class into groups of approximately 5. Each group is given the name of an animal or picks their own choices. The group combines to form the animal. The rest of the class tries to guess what animal the group is.

—Students can express animal behavior and movement by playing a passenger on Noah's Ark. Count the number of children present. Write a list of animals that is half the number of children. Write each animal twice so that the players will have partners ("two by two"). If there is an odd number, have one group of three. Distribute the animal names at random in "closed ballot" form. The children now become the animal and act like it. They find their partner by observing the movements, sounds and shapes of the other animals. No talking is allowed. When partners have found each other, they stand together quietly.

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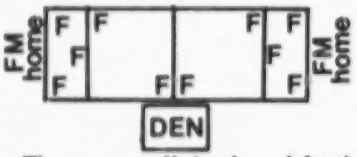
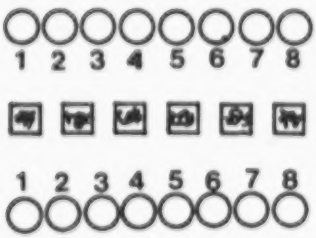
—Play "Nesting Red-Winged Blackbirds." Players are in groups of 3, except for one person who is the caller. Two of the group hold hands and form a cattail nest. The third player is a red-winged blackbird who stands inside the nest. When the caller says, "Blackbirds find a new nest," the birds change locations and the caller tries to find a home. The un-nested bird becomes the new caller. After a while, let the nests and the bird players change roles.



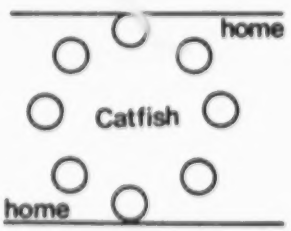
—Play "Fox and Field Mice." Ten children become foxes; others are field mice. They stand in the boundaries as shown in the diagram. Foxes may run from side to side but not out of their boundary line. The field mice line up at the starting line and try to make it to the finish line without being tagged by a fox. Up to four field mice run at one time. Field mice are safe at home or while standing on any line. They can walk back and forth on the lines waiting to escape. If caught, the field mice sit in the den. Start a new game when several field mice have made it safely home or when several are captured in the den. Have the field mice and foxes reverse roles.

—Review the animals in the booklet while exercising. Make several copies of 5 to 7 animal pictures. Tape these on tag board and fasten them to the floor. Students form a circle around the pictures and hop, skip, walk or run in the circle. When the instructor says "Stop", or claps his or her hands, everyone stops moving. The teacher calls out the name of one of the animals and the children try to find the animal and stand by the picture (one person per picture). The children who did not find a picture return to the circle and resume moving until another animal's name is called. The game is finished when all of the children are by a picture.



—The class forms two teams and counts off. The teams face each other with pictures of animals on a center line. The instructor says the name of one of the animals, then calls a number. The two children with that number run to the correct picture, try to get it, and return to their place in line. The picture is replaced and play continues. The instructor keeps score. Add a challenge by having the player who does not reach the picture first attempt to tag the other player before he or she returns to home base. If the player is not tagged, the team gains two points; if tagged, one point.

—Play "Catfish and Bluegill" by choosing one person as the catfish. The others are bluegills. The bluegills form a circle around the catfish. The bluegills have home base lines on either side of the circle. The catfish may jump out at any time and tag a bluegill. Any bluegills that are tagged before they reach home become catfish. Play continues until all of the bluegills are gone.



—Play "Producers-Consumers." Two people are the "sun." The remainder of the class are "producers" or "consumers." (Have about 1 consumer to every 2 producers.) The sun players have a handful of marbles. They are attempting to reach the producers without being tagged by a consumer. If tagged, they give up one marble to the consumer and continue on their way. The producers are also trying to reach the sun(s) to gain energy and to avoid being tagged by a consumer. If tagged, the producer stands still. At the end of play, see how many marbles the producers and consumers have. Discuss what happens when there are more consumers than producers.

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Resources and References

etc... ...Appendix

Locate the Department of Wildlife and Parks office closest to you. The office personnel may be able to help you, and most offices have free informational brochures.

Pratt Headquarters
Kansas Department of Wildlife and Parks
RR 2, Box 54A
Pratt, Kansas 67124
316/672-5911

NC Regional Wildlife and Parks Office
511 Cedar, Box 489
Concordia, Kansas 66901
913/243-3857

Downs District Office
Highway 24E
Downs, Kansas 67437
913/454-6315

NE Regional Wildlife and Parks Office
3300 SW 29th
Topeka, Kansas 66614
913/273-6740

Blue Rapids District Office
801 S. Main
Blue Rapids, Kansas 66411
913/226-7509

Kansas City District Office
Clover Leaf Bldg. 1, Suite 221
6811 W. 63
Shawnee Mission, Kansas 66202-4080
913/722-6024

Manhattan District Office
Rt. 6
Manhattan, Kansas 66502
913/539-9479

Osage District Office
Osage State Fishing Lake
Box 303
Carbondale, Kansas 66414
913/665-7341

NW Regional Wildlife and Parks Office
Route 2
Hays, Kansas 67601
913/628-8614

Colby District Office
190 Franklin, Box 366
Colby, Kansas 67701
913/462-3367

SC Regional Wildlife and Parks Office
8420 N. Broadway, Box 317
Valley Center, Kansas 67147
316/755-2711

El Dorado District Office
Walnut Valley Bank Bldg., Box 129
El Dorado, Kansas 67042
316/321-9399

Emporia Wildlife Investigation Office
1830 E. Merchant
Emporia, Kansas 66801
316/342-0658

Fall River District Office
Rt. 1, Box 85
Severy, Kansas 67137
316/583-6783

Winfield District Office
Winfield State Hospital
Winfield, Kansas 67156
316/221-1200 ext. 275

SE Regional Wildlife and Parks Office
222 W. Main Building, Suite C & D
Chanute, Kansas 66720
316/431-0380

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SW Regional Wildlife and Parks Office
808 Highway 56
Dodge City, Kansas 67801
316/227-8609

Independence District Office
Park Authority Bldg., Elk City Reservoir
Box 945
Independence, Kansas 67301
316/331-6820

New Strawn District Office
Box 103
New Strawn, Kansas 66839
316/364-2282

Pittsburg Distict Office
Route 2, Box 372 AAA
Pittsburg, Kansas 66762
316/231-3173

Mound City District Office
Courthouse
Mound City, Kansas 66056
913/795-2218

Cheyenne Bottoms Waterfowl Mgmt. Area
Route 3
Great Bend, Kansas 67530
316/793-7730

Garden City District Office
South Star Route
Garden City, Kansas 67846
316/276-8886

KANSAS WILDLIFE Magazine
A bi-monthly publication
available from the
Pratt headquarters.
$6.00 - 1-year subscription
$11.00 - 2-year subscription
$15.00 - 3-year subscription
(Prices subject to change.)

There are several other excellent sources of information on environmental topics available in Kansas and nationally. The organizations provide materials, speakers, or services on environmental education. This list is not complete. Make additions where appropriate.

Kansas Organizations

American Camping Association
Missouri Valley Section
4201 W. 15th Street
Topeka, Kansas 66604

Dillon Outdoor Education Center
3002 East 30th
Hutchinson, Kansas 67501

Environmental Education Curriculum Materials Center
Education Division
Farrell Library, Kansas State University
Manhattan, Kansas 66502

Great Bend Zoo
City Park
Great Bend, Kansas 67530

Kansas Academy of Science
Department of Biology
Emporia State University
Emporia, Kansas 66802

Kansas Advisory Council for Environmental Education
(Contact the State Department of Education
Science coordinator, or State and Extension
Forestry for information.)

Kansas Association of Conservation Districts
Route 1, Box 32
McPherson, Kansas 67460

Kansas Bass Chapter Federation
(Write to Kansas Department of Wildlife and Par
RR 2, Box 54A, Pratt, Kansas 67124
Fisheries Division for address of
current Youth Director.)

Kansas Canoe Association
2319 Terry Way
Manhattan, Kansas 66502

Kansas Energy Office
214 W. 6th
Topeka, Kansas 66603

Kansas Geologic Survey
1930 Avenue A, Campus West
University of Kansas
Lawrence, Kansas 66044

Kansas Herpetological Society
Museum of Natural History
University of Kansas
Lawrence, Kansas 66045

Kansas Ornithological Society
Department of Biological Sciences
Fort Hays State University
Hays, Kansas 67601

Kansas Outdoors Unlimited
P. O. Box 470
Herington, Kansas 67449

The Kansas School Naturalist
Emporia State University
Division of Biological Sciences
Emporia, Kansas 66801

Kansas Water Office
Suite 503, Kansas Avenue
Topeka, Kansas 66603

Kansas Wildflower Society
c/o Washburn University
Mulvane Art Center
Topeka, Kansas 66621

Kansas Wildlife Federation
P. O. Box 720
Junction City, Kansas 66441

Lee Richardson Zoo
Finnup Park
Garden City, Kansas 67846

Museum of Natural History
University of Kansas
Lawrence, Kansas 66045

Sedgwick County Department of Environmental Resources
Historic County Courthouse
510 N. Main Street
Wichita, Kansas 67203

Sedgwick County Zoo
5555 Zoo Boulevard
Wichita, Kansas 67212

Soil Conservation Service
USDA
P. O. Box 600
Salina, Kansas 67401

State Biological Survey
2045 Avenue A, Campus West
Lawrence, Kansas 66044

State Conservation Commission
Room 1014, 535 Kansas Avenue
Topeka, Kansas 66603

State Department of Education,
Science, Math & Environmental Education
120 East 10th Street
Topeka, Kansas 66612

State Department of Health & Environment
Forbes Field, Building 740
Topeka, Kansas 66620

State Extension Services
Kansas State University
Umberger Hall
Manhattan, Kansas 66506

State and Extension Forestry
Kansas State University
2610 Claflin Road
Manhattan, Kansas 66502

State Park & Resources Authority
503 Kansas Avenue
P. O. Box 977
Topeka, Kansas 66601

Topeka Zoological Park
635 Gage Boulevard
Topeka, Kansas 66606

Wildlife Society Kansas Chapter
(Contact Kansas Department of Wildlife and Parks
RR 2, Box 54A, Pratt, Kansas 67124
for current president's address)

National Organizations

American Fisheries Society
5410 Grosvenor Lane
Bethesda, MD 20814

American Fishing Tackle Manufacturers Association
20 N. Wacker Drive
Chicago, IL 60606

American Forest Institute
1619 Massachusetts Avenue, N.W.
Washington, D. C. 20036

Boy Scouts of America
National Office
1325 Walnut Hill Lane
Irving, Texas 75062

Bureau of Land Management
U. S. Department of Interior
Washington, D. C. 20240

Center for Action on Endangered Species
175 West Main Street
Ayer, Massachusetts 01432

Center for Environmental Education
625 Ninth Street, N.W.
Washington, D. C. 20001

Ducks Unlimited, Inc.
P. O. Box 66300
Chicago, Illinois 60666

DU Kansas Regional Office
1004 West Ninth
Pratt, Kansas 67124
(check local chapter)

Environmental Protection Agency
401 M Street, S.W.
Washington, D. C. 20460

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ERIC Clearinghouse for Science, Mathematics, and Environmental Education
The Ohio State University
School of Natural Resources
1200 Chambers Road, 3rd Floor
Columbus, Ohio 43212

Forest Service
U. S. Department of Agriculture
P. O. Box 2417
Washington, D. C. 20013

The Garden Club of America
598 Madison Avenue
New York, New York 10022
(check local group)

Girl Scouts of the U.S.A.
830 Third Avenue
New York, New York 10022
(check local group)

Izaak Walton League of America
1800 North Kent Street, Suite 806
Arlington, Virginia 22209
(check local group)

National Association of Biology Teachers
11250 Roger Bacon Drive
Reston, Virginia 22090

Kansas Association of Biology Teachers
(Contact State Department of Education
Science Coordinator for current address.)

National Association for Environmental Education
P. O. Box 400
Troy, Ohio 45373

National Audubon Society
950 Third Avenue
New York, New York 10022

Kansas Regional Office
813 Juniper Drive
Manhattan, Kansas 66502
(check local group)

National Park Service
U. S. Department of Interior
Interior Building
Washington, D. C. 20240

National Science Teachers Association
1742 Connecticut Avenue, N.W.
Washington, D. C. 20009

State Chapter
Kansas Association of Teachers of Science
Contact: State Dept. of Education
Science Coordinator for information

National Shooting Sports Foundation
1075 Post Road
Riverside, Connecticut 06878

National Wild Turkey Federation
Wild Turkey Bldg., P.O. Box 530
Edgefield, South Carolina 29824

National Wildlife Federation
1412 16th Street, N.W.
Washington, D. C. 20036

The Nature Conservancy
Suite 800, 1800 N. Kent Street
Arlington, Virginia 22209

Natural Science for Youth Foundation
763 Silvermine Road
New Canaan, Connecticut 06840

Quail Unlimited
P.O. Box 10041
Augusta, Georgia 30906

Safari Club International
5151 E. Broadway, Suite 1680
Tucson, Arizona 85711

Sierra Club
530 Bush Street
San Francisco, California 94108
(check for local group)

Smithsonian Institution
1000 Jefferson Drive, S.W.
Washington, D. C. 20560

Soil Conservation Service
U. S. Department of Agriculture
P. O. Box 2890
Washington, D. C. 20013

Sport Fishing Institute
Suite 503
719 13th Street, N.W.
Washington, D. C. 20005

U. S. Fish and Wildlife Service
Department of the Interior
Washington, D. C. 20240

The Wilderness Society
1901 Pennsylvania Avenue, N.W.
Washington, D. C. 20006

Wildlife Management Institute
709 Wire Building
1000 Vermont Avenue, N.W.
Washington, D. C. 20005

The Wildlife Society
5410 Grosvenor Lane
Bethesda, Maryland 20814

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Glossary

Many of the terms below have been defined in the curriculum material. Check an ecology or biology book for further definitions and information. Definitions are taken from context of use in texts and the following sources:

Multidisciplinary Wildlife Teaching Activities, by William R. Hernbrode; *Project Learning Tree*, by the American Forest Institute, Inc.; and *The Random House Dictionary of the English Language, College Edition.*

ACRE—A unit of land equal to 43,560 square feet or 1/640 square mile.

ADAPT—To make suitable to environmental conditions; adjust.

AMPHIBIAN—Cold-blooded vertebrates that are covered with moist skin and live partially in an aquatic habitat and partially on dry land. This group includes frogs, toads, and salamanders.

ANNUAL TURNOVER—The rate of replacement of individual animals in a population. Bobwhite quail may have a 70 percent annual turnover. Only 30 percent of the birds alive at the beginning of the year are alive at the end of the year.

ANTLER—Bone-like growth on members of the deer family that falls off and grows back each year. Horns differ from antlers because they do not fall off each year. A few horned animals drop the outside sheath of the horn (such as antelope).

AQUATIC—Living or growing in water.

ARACHNID—Any arthropod in the class *Arachnida*. Includes spiders, scorpions, mites, ticks, etc.

BAG LIMIT—The number allowed to be harvested in regulated hunting and fishing. A hunter may remove four pheasants each day. This is a bag limit.

BIG GAME—Large, hunted animals, such as antelope and deer. Examples of small game are rabbits, squirrels, pheasants, quail, etc.

BIOME—A complex of communities characterized by a distinctive type of vegetation and maintained under the climatic conditions of the region.

BIOTIC COMMUNITY—The living organisms in a community. Includes all plants and animals in the community. The non-living parts would be the abiotic parts of the community.

BLIND—A hiding place for observing or photographing.

BOOMING GROUND—An area in the prairie used by prairie chickens for their mating dance. The male birds make a booming sound while they dance to attract females.

BOTTOMLAND—Low-lying land, usually near a river.

BOUNTY—An old practice of paying for removing certain animals. This was thought to be useful in reducing pest animals but proved to be impractical.

BROWSE—This word can be a noun or verb. Brushy vegetation used by animals as food (noun). To eat the twigs and leaves of woody, brushy plants (verb). Deer, elk, and moose are browsers.

BRUSH PILE—Branches and other vegetation piled together for wildlife cover.

BURROW—A hole or tunnel in the ground made by a small animal for habitation and refuge.

CAMOUFLAGE—Color and/or pattern that blend into the environment.

CARNIVORE—Meat eater.

CARRION—Dead animals in the process of decaying. Crows feed on carrion.

CARRYING CAPACITY—The number of animals of a species that can be supported in a particular habitat at any given time. This number will change with the season, and from year to year. It depends on competition from other animals, rainfall, and other weather factors.

CHANNELIZATION—Changes made to a river bed to straighten, widen, or deepen it. Used in land reclamation, and mistakenly used in flood control attempts but is very harmful to the river habitat.

CLASSIFICATION—The assignment of plants and animals to groups within a system of categories distinguished by structure, origin, etc.

CLEARCUT—A logging practice that removes all the trees in an area.

COLD-BLOODED—Describes animals that change body temperature to match their surroundings.

COMMUNITY—A group of plants and animals living in a particular location and interacting with each other.

COMPETITION—Struggle among organisms for food, space, cover, and other requirements for existence.

CONSERVATION—The wise use of natural resources to assure their presence in the future.

CONSUMER—Uses plants or animals as food. Eats producers. A primary consumer, such as a rabbit, eats plants. A secondary consumer, such as a fox, eats primary consumers.

COVER—Shelter provided by vegetation, debris, and irregularities of the land. Used by wildlife for sleeping, hiding, feeding, and breeding areas.

COVEY—A small flock or group. Quail are often found in a covey.

CRITICAL HABITAT—Includes the areas of land, water, and air space occupied by an endangered species at the time this species is listed. This habitat is classified by the federal government as being necessary for the species' survival.

CRUSTACEAN—Any chiefly aquatic arthropod of the class *Crustacea*. Usually has a hard shell or crust covering the body. Includes lobsters, shrimps, crabs, barnacles, etc.

DABBLING DUCKS—Ducks that live near shallow marshes, ponds, and rivers. They tip their tails up to feed, with the majority of their bodies above water. These ducks take off in vertical flight when startled. Also called "puddle ducks."

DECOMPOSER—Plants and animals that feed on dead material and cause it to mechanically or chemically break down. Examples include bacteria, fungi, and earthworms.

DEN—A secluded place, as the lair of a predatory animal.

DINGELL-JOHNSON FEDERAL AID IN FISHERIES RESTORATION ACT—D-J funds provide federal cost shares for fisheries projects. Funds provided by an excise tax on some fishing equipment.

DIURNAL—Active during the day. Opposite of nocturnal.

DIVING DUCKS—Ducks that prefer deep water as in lakes and bays. They feed by diving below the surface and take flight from a running start.

DOMESTIC ANIMALS—Animals of the home or farm, such as dogs, cats, chickens, etc.

ECOLOGY—The scientific study of the relations of living things to one another. A scientist who studies these relationships is called an ecologist.

ECOSYSTEM—A system formed by the interaction of a community of organisms with each other and their nonliving environment.

EDGE EFFECT—The tendency of wildlife to concentrate at the edges of two adjacent vegetative or land use types. The combination of habitats provides extra food and shelter.

ENDANGERED—Species that are in danger of becoming extinct throughout all or a significant portion of their range.

ENVIRONMENT—The total of all surroundings including air, water, plant life, people, and wildlife. Physical and biological factors included.

ESTIVATE (Aestivate)—To spend the summer in a torpid, or dormant, condition.

EXOTIC—In conservation terminology, this refers to a foreign plant or animal that has been introduced into a new area. The ring-necked pheasant is an exotic introduced to the U. S. from Asia.

EXTINCT—Species that no longer exist. Examples include passenger pigeon, great auk, and the sea mink.

EXTIRPATED—Describes species that were removed in a particular area but are found elsewhere. Mountain plover were extirpated from Kansas and have only recently been reintroduced.

FENCEROW—Vegetation growing along a fence. Often used by wildlife for cover.

FISH AND GAME COMMISSION—Organization that has responsibility for the wildlife and habitat in the state. Each of the 50 states has a similar organization.

FLYWAY—Flight routes used by migratory birds. Kansas is in the Central Flyway.

FOOD CHAIN—The sequence by which energy is passed from sun to plants to animals. A green plant is eaten by an insect that is eaten by a bird, forming a simple food chain.

FOOD WEB—An interconnection of food chains.

FORAGE—Used as a verb and a noun. Refers to vegetation taken by herbivores (noun). Act of taking the vegetation (verb).

FORBS—For wildlife use, forbs are weeds and herbs, low-growing annual or perennial herbaceous plants.

GAME—Animals that can legally be hunted, fished, or trapped.

GENUS—Used in plant and animal classification as the subdivision of families or subfamilies. A genus usually has more than one species. The genus *Canis* includes dogs, wolves, coyotes, etc.

GRANIVORE—Grain eater.

HABITAT—The place in which an animal lives. It must include food, water, and cover. This involves escape cover, winter cover, cover to rear young, and space to play. Loss of habitat is the biggest single threat to wildlife.

HARE—Rodent-like mammals of the genus *Lepus* having long ears, a divided upper lip, and long hind limbs adapted for leaping. Distinguished from rabbits by having young that leave the nest in 24 to 48 hours. Hares are generally larger than rabbits. Jack rabbits are hares.

HERBIVORE—Plant eater.

HIBERNATE—Spending winter, or a portion of it, in a state of sleep; a torpid or resting state.

HUNT—To search for game animals for the purpose of catching or killing. Hunting is now regulated under comprehensive laws in every state. Sport hunting removes the surplus of wildlife as opposed to market hunting in pioneer days when nearly all edible or useful forms of wildlife were taken almost without restriction.

INTERACTION—The relationship of one organism to another. The action of one population affecting the growth or death rate of another population. One population may eat members of other populations, compete for food, etc. Interactions can be positive, negative, or neutral.

INTERDEPENDENCE—The interrelationships of wildlife with one another and with the various elements of their environment.

INTERSPERSION—Mixing of habitat types. Interspersion of habitat creates edge.

INVERTEBRATE—Animal without a backbone.

KINGDOM—A province of nature. The animal, vegetable, and mineral kingdoms.

LARVA—Immature, wingless, feeding stage of an insect that undergoes complete metamorphosis. Also, the young of any invertebrate.

LIFE CYCLE—The continuous sequence of changes undergone by organisms from one primary form to the development of the same form in a subsequent generation. Immature animals grow, reproduce, and leave more immature animals, defining the species' life cycle.

LIMITING FACTOR—Anything that controls the density of a population within its habitat. Factors include the quality and/or quantity of food, water, cover, predators, disease, and climate.

MAMMAL—Any vertebrate of the class *Mammalia* including humans. All members of this class have hair on their bodies and feed their young milk.

MARSH—A tract of low wetlands generally supporting cattails and other reeds, muskrats, mink, red-winged blackbirds, and a wide variety of other species.

MICROCLIMATE—The environmental conditions in a restricted area. A shady area of cottonwoods in the sunny prairie may create a microclimate.

MIGRATORY—Birds and other animals that make an annual trip to a different area. Distance may be long or short, depending on the species. Sandhill cranes migrate through Kansas on their way to Texas for the winter and Canada for the summer.

MIMICRY—The close external resemblance of an animal to another animal or its surrounding. Often serves as protection or concealment. Imitate; simulate.

MOLLUSK—Any invertebrate of the phylum *Mollusca* comprising the chitons, snails, bivalves, squids, octopuses, etc. Typically have a hard shell.

MOLT—To shed worn feathers or skin so they can be replaced, or to lose one seasonal coat so it can be replaced by another.

MONOCULTURE—Vegetation of a single species, generally even-aged. This situation allows for little wildlife diversity and is potentially dangerous because it is more susceptible to disease.

MORTALITY RATE—The relative frequency of death in a community.

MUTUALISM—A close association between two different species whereby each species gains some benefit.

NATALITY RATE—Rate of birth.

NATIVE SPECIES—An animal or plant indigenous to a particular region.

NATURAL SELECTION—Process resulting in the survival and perpetuation of only those forms of plant and animal life that are able to adapt to the environment.

NOCTURNAL—Active at night; opposite of diurnal.

NONGAME—Animals that are not hunted, fished, or trapped; this includes the threatened and endangered species, song birds, etc.

NONRENEWABLE RESOURCES—Resources, such as soil and minerals, which cannot be regenerated by themselves.

OMNIVORE—Animal that eats both plants and animals.

ORGANISM—A form of life composed of mutually dependent parts that maintain various vital processes; any form of plant or animal.

PARASITE—An animal or plant that lives on or in an organism of another species from whose body it obtains nourishment.

PESTICIDE—Chemical preparation used to control populations of organisms.

PHOTOSYNTHESIS—The process by which green plants convert carbon dioxide and water into simple sugar. Chlorophyll and sunlight are essential to the series of complex chemical reactions involved.

PHYLUM—The major subdivision of the animal kingdom, consisting of one or more related classes.

PITTMAN-ROBERTSON FEDERAL AID IN WILDLIFE RESTORATION ACT—Funds gathered from an excise tax on sporting arms and ammunition for wildlife management and research use. A cost-sharing program of the federal government with the states.

PLANKTON—Organisms (usually microscopic) suspended in aquatic habitat. Includes bacteria, algae, protozoans, rotifers, etc. Phytoplankton are the plant plankton; zooplankton are the animal species.

POLLUTION—Harmful substances deposited in the air, water, or land which lead to a state of impurity and, often, unhealthiness.

POPULATION—All the individuals of a particular species in a given area.

PREDATOR—An animal that hunts other animals for its food.

PRESCRIBED BURNING—Planned application of fire to a predetermined area. A technique used in wildlife management to gain regrowth of certain vegetation.

PREY—Animals that are hunted for food by other animals.

PRODUCER—Organisms eaten by consumers. Green plants are primary producers; they are able to make food from sunlight and organic substances.

PRONGHORN—The proper name for the American antelope, *Antilocapra americanus*. Not a true antelope; does not have true horns. Pronghorns belong to a family by themselves. They are not found outside of North America.

RANGE—(a) Home range: the geographic area in which an individual animal resides. (b) an area grazed by livestock and/or wildlife. (c) all lands including forest land that produce native forage, in contrast to land cultivated for agricultural crops or carrying a dense forest.

RAPTOR—Bird of prey, such as eagles, hawks, and owls. Predatory birds.

RECYCLING—The salvage and reprocessing of used materials, such as paper, glass, and aluminum.

REFORESTATION--The replanting of trees in forests that have been affected by cutting, fire, disease, etc.

REFUGE—A wildlife sanctuary. National wildlife refuges are located across the United States. Kirwin, Quivira, and Flint Hills NWR are in Kansas.

REINTRODUCTION OF SPECIES—A wildlife management technique in which a species is reintroduced into its historic range, replanted in areas where it was extirpated.

RENEWABLE RESOURCES—Resources, such as trees and wildlife, that renew themselves naturally.

REPTILE—Any cold-blooded, scaled vertebrate of the class *Reptilia*, including turtles, lizards, snakes, and crocodiles.

RESERVOIR—A place where water is collected and stored for use. Kansas has approximately 25 reservoirs, such as Cheney, Wilson, and Clinton.

RESIDENT WILDLIFE—Animals that are residents of a specific area on a year-round basis, as opposed to migratory.

RIPARIAN—Dwelling on the bank of a river or other body of water. Riparian habitat is situated along a river.

RIPRAP—A quantity of stone placed in water for fish cover, and to prevent bank erosion.

ROADSIDE DITCH—Areas bordering roads; can be excellent for wildlife habitat if they are left to grow and have diverse vegetation. Too often, these areas are mowed and their use to wildlife reduced or removed.

RODENT—A gnawing or nibbling mammal, including mice, squirrels, and rabbits. Animals in the order *Rodentia*.

SACS—The baglike structure in an animal or plant. The prairie chicken has orange sacs on the sides of its neck.

SCAVENGER—An animal that eats the dead remains and wastes of other animals and plants. Dermestid beetles are scavengers.

SEASON (OPEN SEASON)—In wildlife terminology, season refers to a time when hunting and fishing is permitted for a particular species. May be a few days or year-round.

SEDGE—A rush or grass-like plant growing in wet places; sawlike edge to blade of plant.

SHELTER—Cover; cover from elements for raising young, to travel in, for breeding, sleeping, etc. Varies by species.

SHELTERBELT—Rows of trees and shrubs generally on the north and west sides of farms, homes, or fields; protects from weather and provides wildlife habitat.

SKINK—Any of a family of small, smooth-scaled lizards.

SLOUGH—An inlet from a river; backwater; tide flat, a creek in a marsh.

SMALL GAME—A hunting term designating smaller hunted species, such as rabbits, squirrels, quail, etc. Compare with "big game."

SPECIES--A group of individuals that resemble one another and are able to breed among themselves but not able to breed with members of another species. A category of biological classification immediately below the genus or subgenus. Species is both singular and plural.

STEWARDSHIP—The concept of land responsibility--that we do not own land but are managers of the resource and responsible to future generations for the condition of the land when we leave it.

STRESS--Usually thought of as a physical factor that applies to detrimental pressure to an organism or population. A drought might stress an animal population possibly resulting in inhibited reproduction.

SUCCESSION—The orderly, gradual, and continuous replacement of one plant or animal by another. A bare field will gradually develop into a woodland if not disturbed by fire, mowing, etc.

SURPLUS—That quantity of wildlife above the carrying capacity. The surplus is removed by disease, starvation, hunting, or predation.

TALON—A claw from a bird of prey.

TERRITORY—An area defended by an animal against others of the same species. Used for breeding, feeding, or both. Wolves are territorial.

THREATENED—Species of plants and animals that are protected by law and are limited in number or range or both. May become endangered if reduction continues.

UNGULATE—A hoofed mammal.

UNITED STATES FISH AND WILDLIFE SERVICE—The federal organization responsible for wildlife on the national level. This organization sets standards and gives guidance to the state wildlife agencies.

UPLAND—The higher ground of a region; above the level where water flows. Upland game animals include prairie chicken, turkey, pheasant, quail, etc.

VERTEBRATES—Animals with backbones.

WARM-BLOODED—Animals that are able to maintain a fairly constant body temperature independent of their environments, as opposed to cold-blooded animals.

WATERFOWL--Water birds; usually ducks and geese but may be used in referring to shore birds and wading birds as well.

WILDFIRE—Any fire other than a controlled or prescribed burn occurring on wild land.

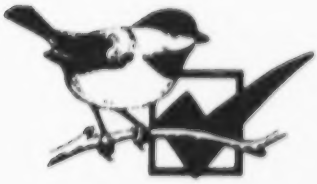
WILDERNESS AREA--An area established by the federal government to conserve its primeval character and influence for public enjoyment under primitive conditions in perpetuity.

WILDLIFE—All wild, living animals. Includes birds, fish, mammals, reptiles, amphibians, insects, mollusks, crustaceans, etc. Occasionally, the term is even applied to plants. Game and nongame animals are wildlife.

WILDLIFE MANAGEMENT—An effort based on the science of ecology and designed to maintain wildlife at certain population levels. This effort entails habitat manipulation and an understanding of wildlife population dynamics, diseases, behavior, and reproduction. This is done by wildlife managers working for the Fish and Game Commission and by other interested individuals and groups.

WILDLIFE RESEARCH--Investigating wildlife to gain information that can be used to better manage wildlife. Examples of projects might include taking a survey or census of populations, gathering and analyzing data about animal behavior, and studying and comparing the interaction of wildlife within habitats.

ZOOLOGY—The study of animals; a branch of biology.



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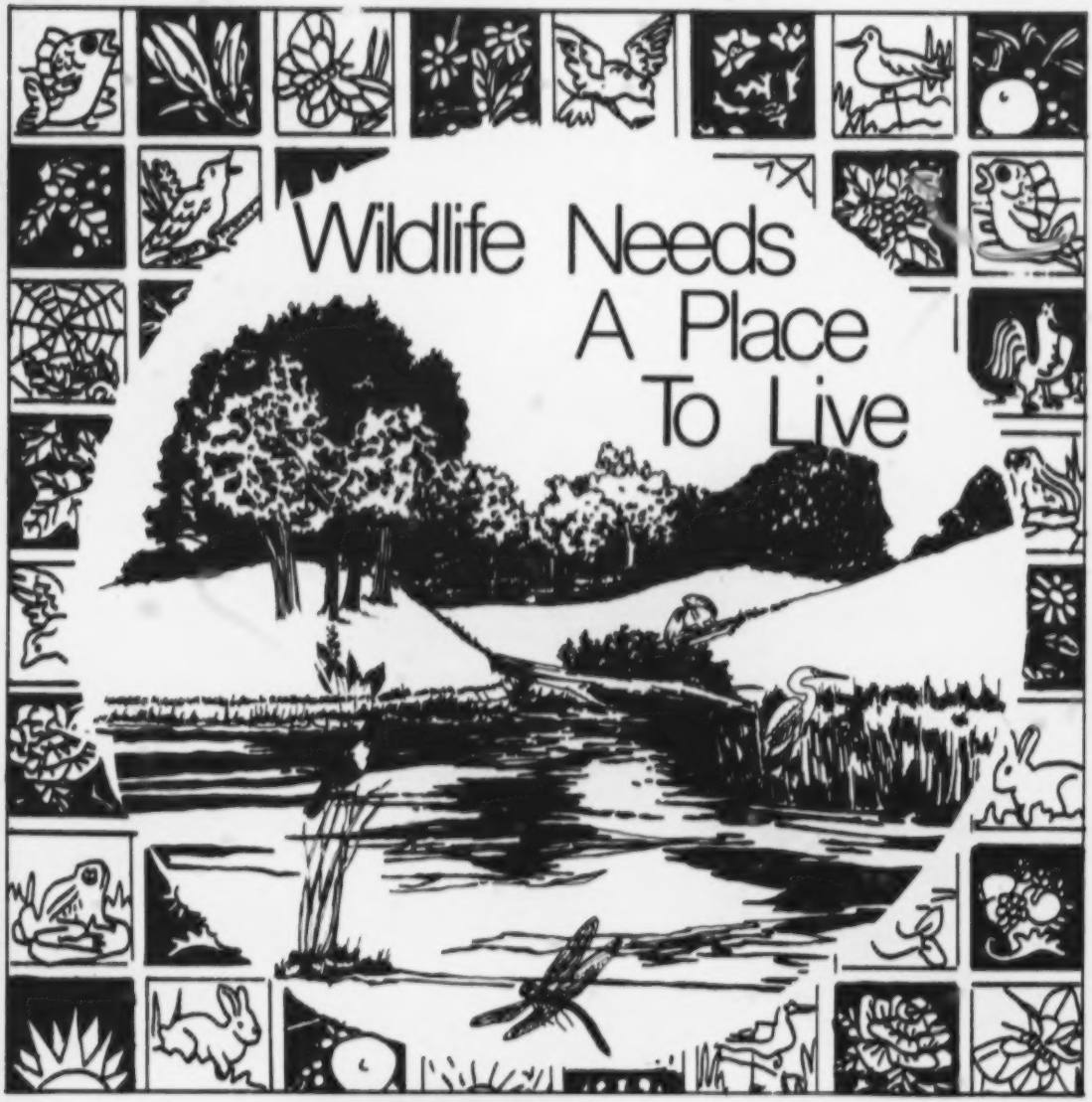

KANSAS FISH AND GAME

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Comprehensive program written and developed by
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Wildlife Education Coordinator

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wildlife education service
KANSAS FISH AND GAME

**THIS MATERIAL IS DEDICATED TO THE CHILDREN OF KANSAS;
MAY THEY KNOW A LOVE OF WILDLIFE.**

The elementary series includes:

Preschool-Kindergarten	WILDLIFE IS BASIC
1st grade	WILDLIFE AND ME
2nd grade	FOOD FOR WILDLIFE
3rd grade	WILDLIFE NEEDS A PLACE TO LIVE
4th grade	ENDANGERED, OR ALIVE AND WELL LIVING IN KANSAS
5th grade	HOW DO WE GROUP WILDLIFE?
6th grade	HOME IS WHERE THE HABITAT IS

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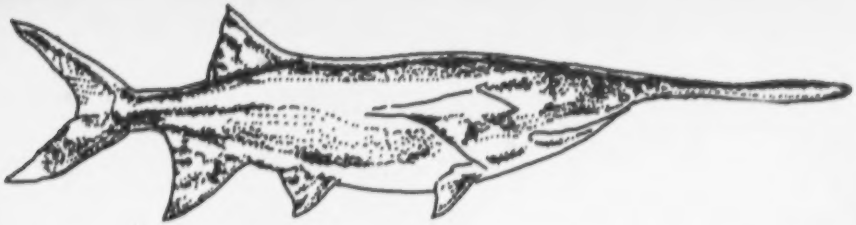
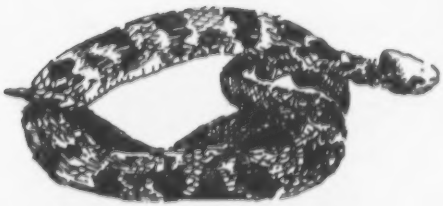


habitat



Kansas is home for many kinds of wildlife. Where an animal lives is called its habitat. Habitat includes food, water, and cover.

PRAIRIES

WOODLANDS

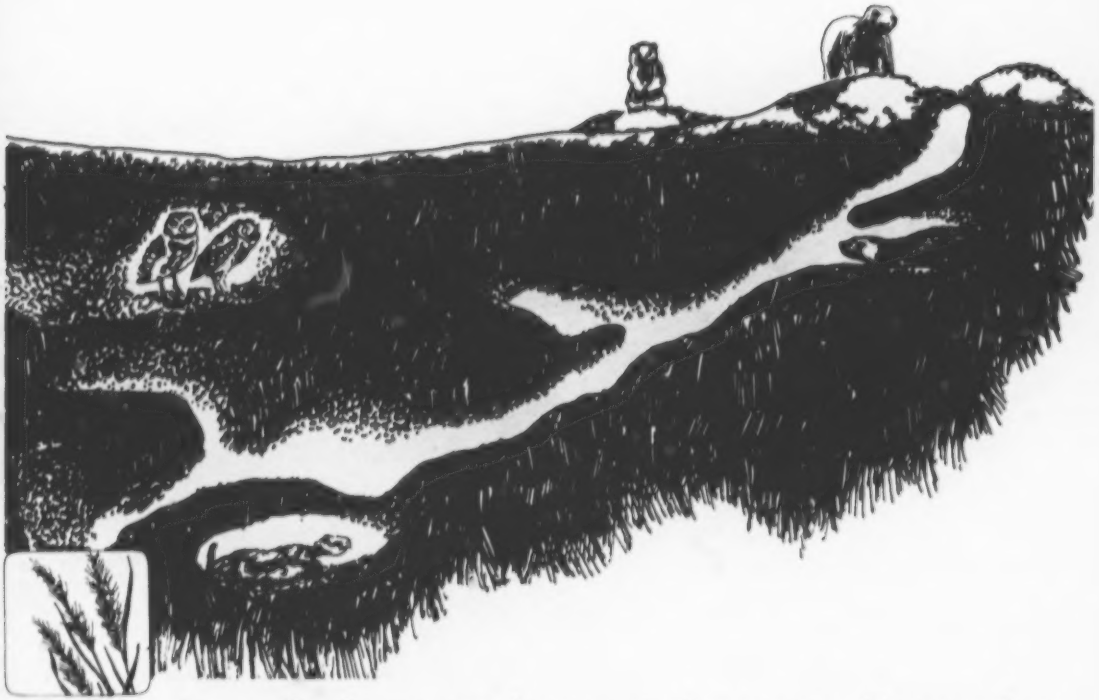
STREAMS, LAKES,
& RESERVOIRS

MARSHES

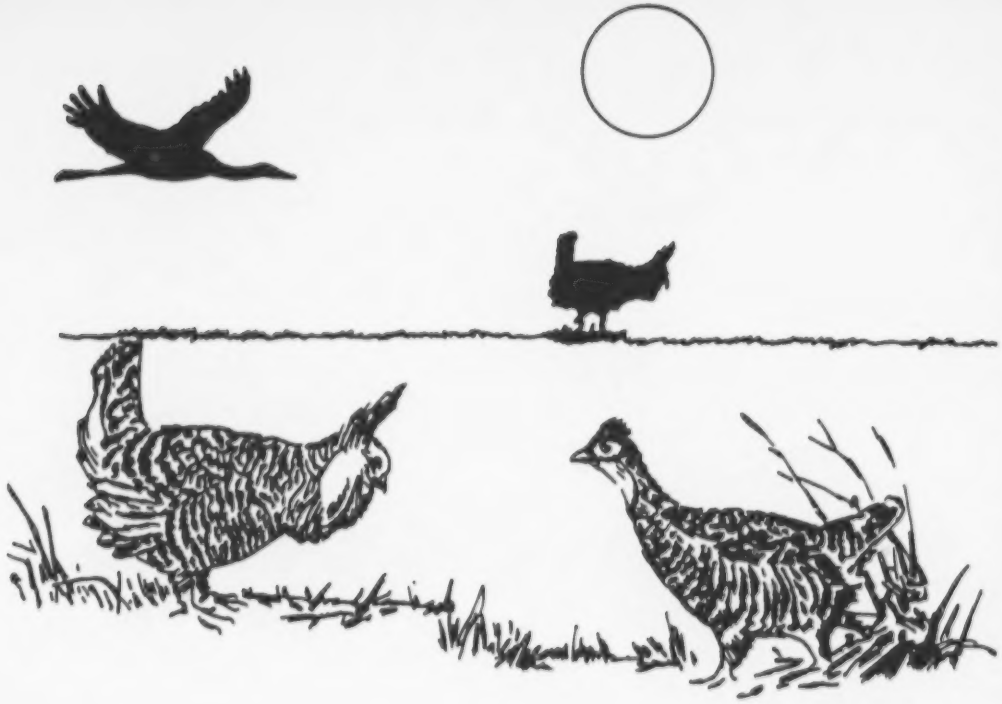
Let's look at some of the different kinds of habitat we have in Kansas and the wildlife you might see there. Prairies, woodlands, marshes, streams, lakes, and reservoirs are all kinds of habitat you can find in Kansas.

Kansas has tallgrass prairie in the east and shortgrass prairie in the west. The kind of prairie depends on how much it rains. But all prairie is home for wildlife. The scissortail flycatcher and the meadowlark are two birds that live there.

The swift fox digs a den in the prairie soil. The ornate box turtle uses old dens or burrows to spend the winter. Jack rabbits and prairie voles live among grasses and sedges. They raise their young in nests of grass, and hide behind tumbleweeds.



Prairie dogs dig large underground towns. Burrowing owls and prairie rattlesnakes make their homes in old prairie dog holes. Swainson's hawks nest in the near-by trees or on the ground and hunt for food in the prairie dog town.



Greater and lesser prairie chickens make their homes among the prairie grasses and feed in nearby croplands. During the spring, the male does a dance on the booming grounds so he can find a mate. He has big orange sacs on the side of his neck that help make a booming sound. Sandhill cranes visit Kansas prairies during spring and fall migrations. They winter in Texas and summer in Canada.

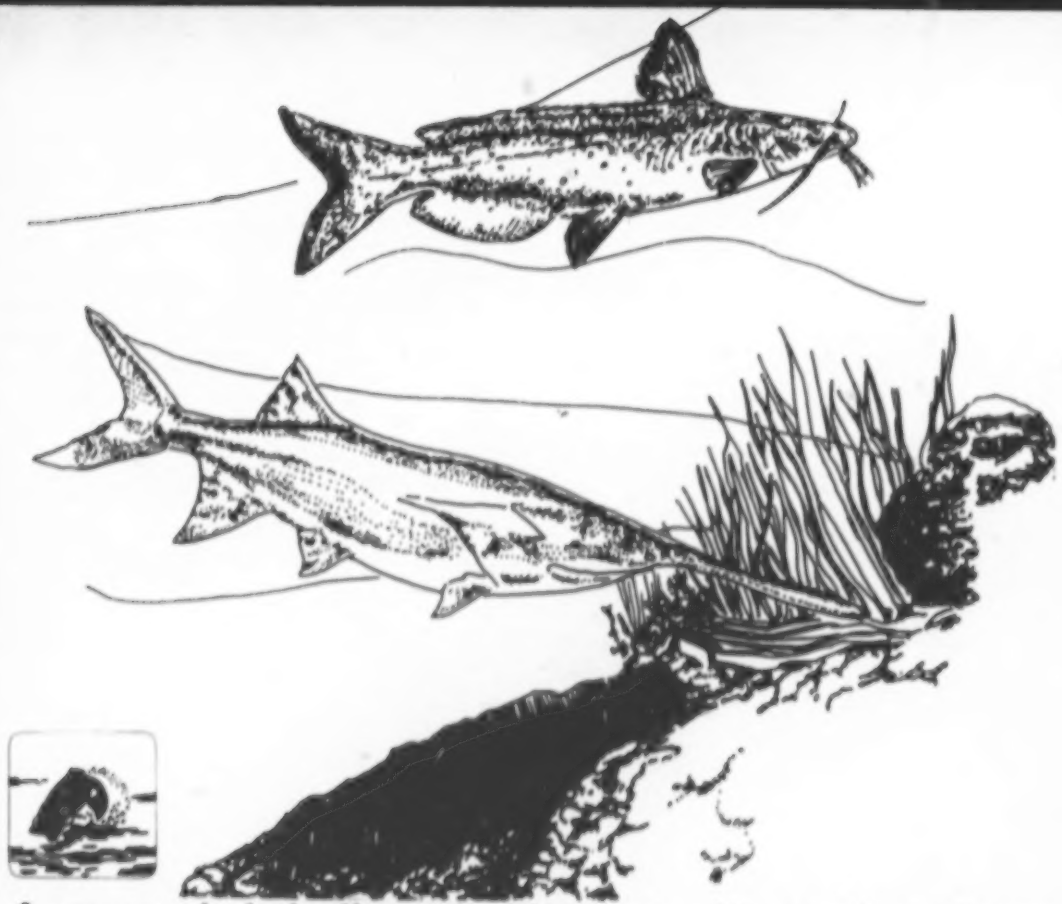
Pronghorn antelope and mule deer browse on prairie plants. The prairie falcon flies overhead looking for food while the prairie–lined racerunner dashes for cover. The coyote is never far away from food and can survive in many different habitats.

The woodlands of Kansas are scattered throughout the central and eastern parts of the state. Trees shelter wildlife from weather and predators. They also make good lookouts and nesting sites for birds. Some animals eat parts of the tree.

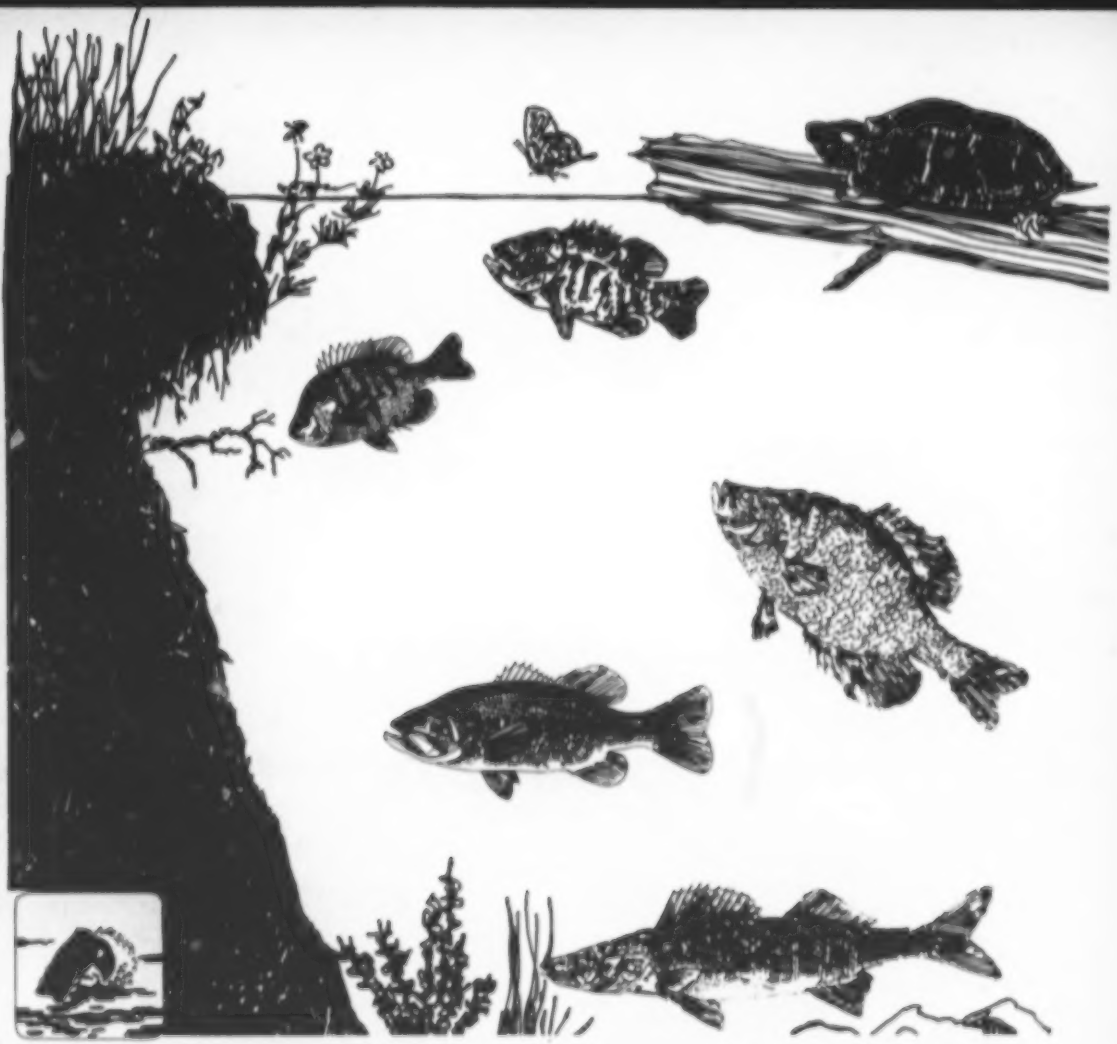
Gray and fox squirrels make their homes in the trees where they find food and shelter. The great horned owl uses a hole in a dead tree for its nest. A ground skink secretly crawls across the forest floor to its home in the leaves.

The woods are full of insects. Some live under tree bark; others crawl on the ground. The pileated woodpecker lives in the woods, too. Guess what this woodpecker plans to have for lunch today? The red-bellied snake stays under the leaves looking for worms and slugs to eat.

Water is needed by all wildlife. The streams, lakes, and reservoirs in Kansas are also very important as homes for many kinds of wildlife. Think about all the animals that live in or near water and you'll probably come up with fish, frogs, water snakes, ducks, and geese. The plains leopard frog likes places with water and spends its winter in the muddy bottom of a lake or pond. Coots float like boats but water striders actually walk on the water. How do they do it?

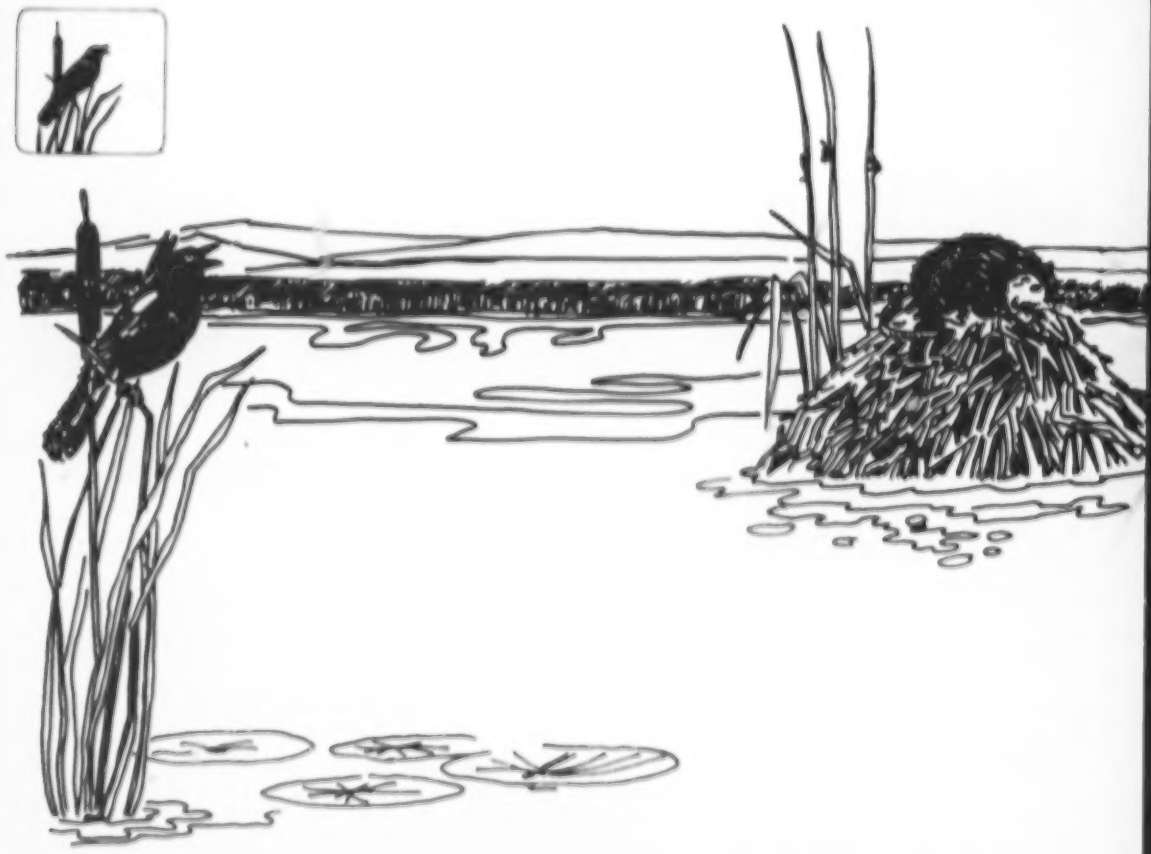


A reservoir is built to hold water. Kansas has about 25 reservoirs, and they can be great places to find fish. Channel catfish are popular with people who fish in Kansas. They can be found in most rivers, lakes, and reservoirs. Young 'channel cats' like shallow water with rocks; the adults like deeper water with logs. Paddlefish live in only two eastern Kansas rivers. Once you've seen a paddlefish, you'll know how it got its name.



Bluegill, sunfish, bass, and crappie like clear lakes with plants. Walleye can be found in deep water. The red-eared turtle likes lakes with soft mud bottoms and plenty of plants and logs to take a nap in the sun. Wouldn't it be fun to fly like a swallowtail butterfly?

Some animals need that special combination of water, plants, and land called a marsh. If you're lucky enough to see a Kansas marsh, look for muskrats building their houses from cattails. Red-winged blackbirds make their loud call while they perch among the water plants. Why do you think we don't have as many marshes as we once did?



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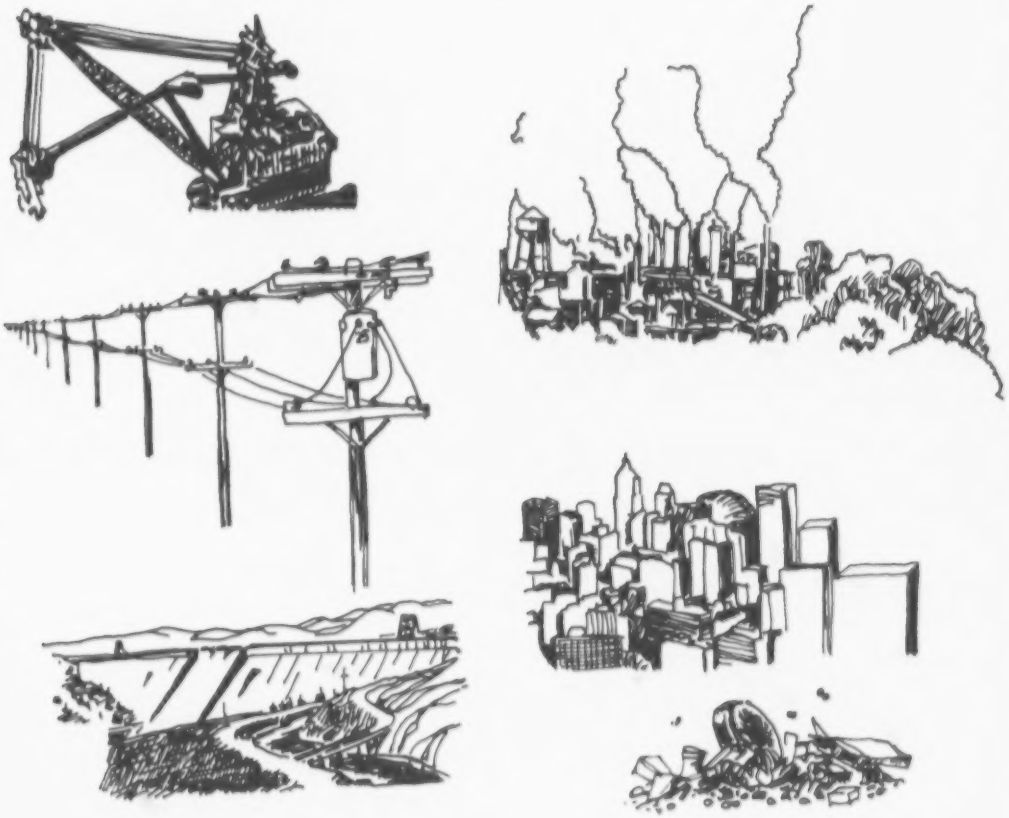
The marsh is a busy place. Ducks, such as mallards, teal, and shovelers, search the marsh for food. They nest in nearby grassy fields away from skunks, mink, and snakes that would eat their eggs. Avocets feed and nest along the shoreline of the marsh. Black-crowned night herons hunt and nest in the cattails. Raccoons live near water where they find meals of crayfish and frogs.

There are places where one habitat meets another. This is called an edge, like the edge of this page touching the next page. Wildlife likes the variety of food and shelter that edges provide. Whitetail deer and cottontail rabbits enjoy croplands near woodlands. Pheasant, quail, and turkey like the combination of crop fields with grasslands.

Farms can be good places to find wildlife if there is habitat for them. Look in the barn window to see the helpful barn owl that caught a mouse. A mourning dove is perched on a telephone wire. Can you find the spider's web that has caught a fly?

People and their pets are not the only city residents. Look closely at the picture to find the squirrel, and a robin nesting in the tree. Can you find any small animals, such as ants, worms, or beetles living in cracks in the sidewalk or in your yard? Bats live in old buildings and fly at night to catch their dinner of insects.

People share the world with wildlife. Sometimes we take more than our share without thinking about what wildlife needs.



You have seen just a few of the animals we have in Kansas. The people of Kansas are lucky to have such a variety of wildlife. We can keep the wildlife we have by making sure there will always be a place for wildlife to live. Habitat (food, water, and cover) can be shared by wildlife and people if we care and plan for wildlife in our future.

Here are some ways you can help wildlife:

--Plant trees, shrubs, flowers, and prairie grasses in your school ground, park, or home yard. Make sure your area is protected from lawn mowers.

--Build a brushpile of branches, old Christmas trees, and leaves for rabbits and other small animals to hide in.

--Set up bird feeders and bird houses. Once you begin feeding in winter, make sure you continue. The birds will depend on you for food.

--Give wildlife a supply of water with a bird bath or small pool.

--Tell other people about wildlife and how important habitat is.

You saw some words that may be new to you when you read "Wildlife Needs A Place To Live." See if you know what these words mean now. Go back and find each word in the booklet.

wildlife
habitat
cover
prairie
woodland
marsh
reservoir
burrow
prairie dog town
booming ground
mate
migration
stream
sacs
resident
browse
shelter
den
nest
sites
hunt
shallow water
adults
perch
shoreline
edge
sedges
share
variety
croplands

On another piece of paper, pick out your four (4) favorite animals and write down at least three (3) things you could do to improve their habitats. Remember that habitat includes food, water, and cover.

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